



ANNUAL REPORT 2014 | FEDERAL RESERVE BANK OF ST. LOUIS



Speed, Security, Efficiency:

Improving the U.S. Payment System

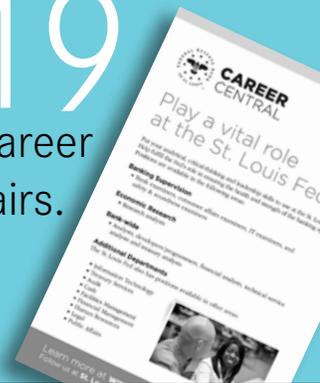
OUR PEOPLE,
OUR WORK
IN 2014



1,117 employees
as of Dec. 31, 2014.

Recruiters attended

19
career
fairs.



29.1 percent

of the St. Louis Fed's spending on goods and services went to **minority-owned business enterprises** and **women-owned business enterprises**.

The St. Louis Fed supervised

130 state member banks
and 509 bank holding companies.

Internal auditors charged

25,893 hours
to performing
audits of bank
operations.



As fiscal agent to the U.S. Treasury and its Do Not Pay program, the St. Louis Fed helped federal agencies identify

\$1.6
million

of **improper payments**, helping eliminate payment error, waste, fraud and abuse.

The St. Louis Fed recycled
97,900 lbs.
of shredded notes deemed
unfit for circulation

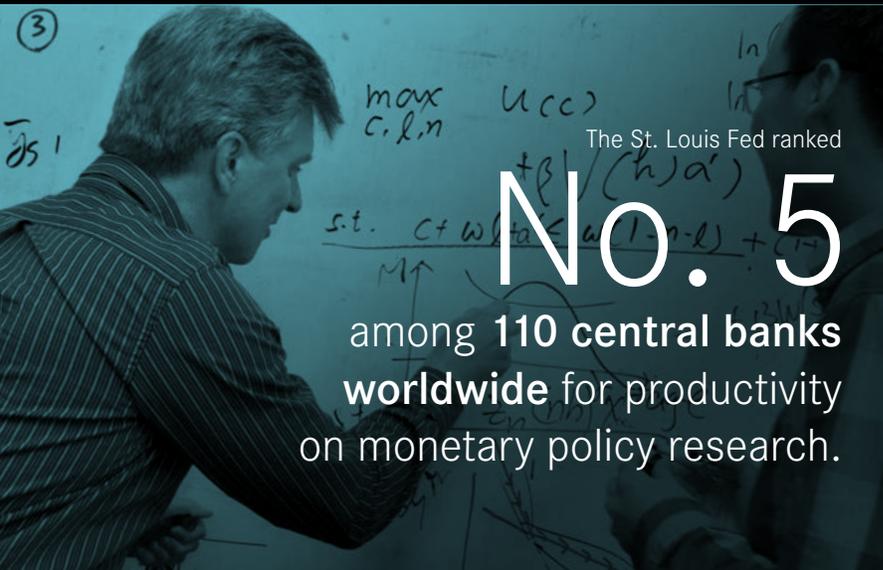


and discovered
3,330
suspected counterfeit notes.

The St. Louis Fed ranked

No. 5

among 110 central banks
worldwide for productivity
on monetary policy research.



Federal Reserve Economic Data (FRED) had

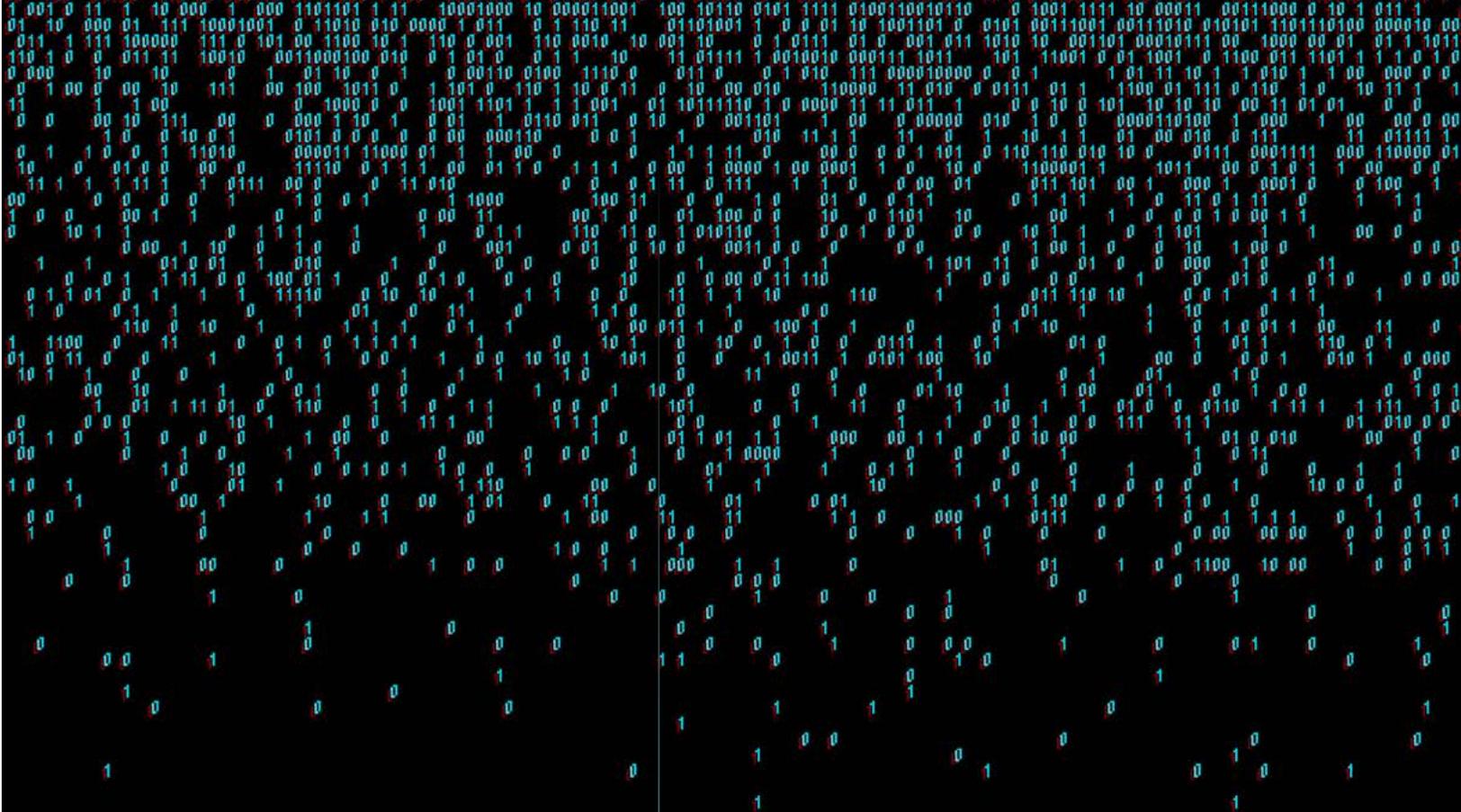
34,669,163

data points added or revised in 2014.



ECONOMIC DATA | ST. LOUIS FED

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Speed,
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Improving the U.S.
Payment System

ANNUAL REPORT 2014

FEDERAL RESERVE
BANK OF ST. LOUIS



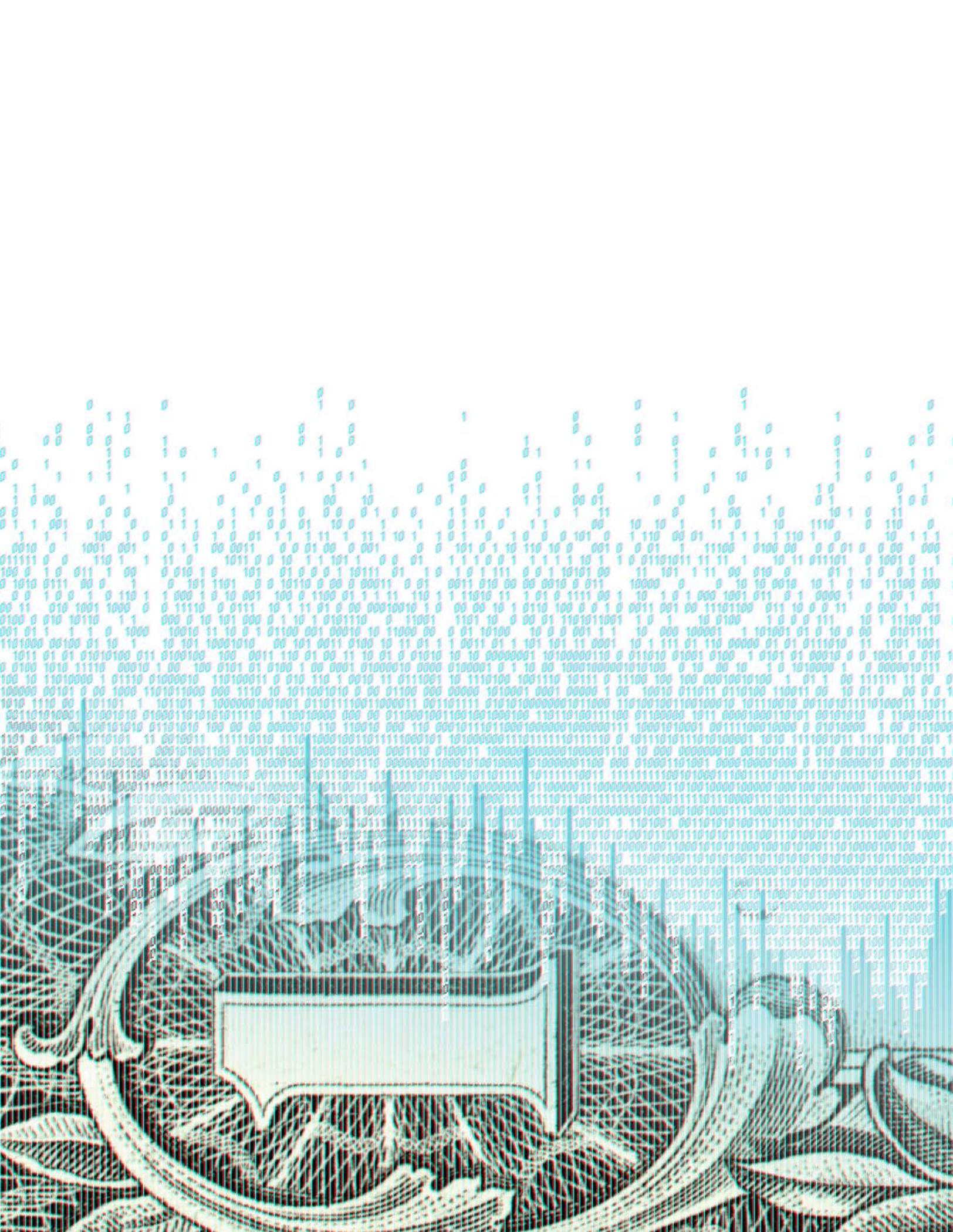


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PRESIDENT'S MESSAGE

JAMES BULLARD



When the Federal Reserve was created more than 100 years ago, the primary goal was financial stability. In the aftermath of the financial crisis of 2007-2009, today's public discourse about the Fed is largely focused on its roles with respect to monetary policy, being the lender of last resort and supervision of financial institutions. Nonetheless, financial stability remains of utmost importance. One aspect of financial stability that is receiving increased attention is the payment system. A reliable, efficient and safe payment system is essential to a healthy economy. Quite possibly, the payment system is at a critical juncture in its evolution.

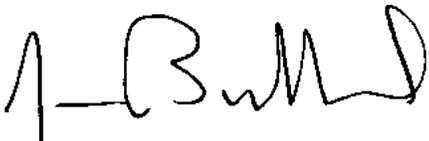
The payment system has been a focal point for the Fed since its founding. Partly in response to disruptions in payments during the Panic of 1907, the Federal Reserve Act allowed for the establishment of a national check-clearing system.¹ The act also created the Federal Reserve note. Since then, Federal Reserve banks have provided cash to meet banks' demand, cleared checks and provided FedACH and Fedwire services, which allow funds to be transferred electronically (e.g., direct deposits, bill payments, wire transfers).

Technology is at the center of changes throughout the payment system, from the elements underpinning payments processing to the services provided to users. While the former changes are less apparent than the latter changes to most of us, they are no less important for reliability, efficiency and safety. Technology is changing the face of payments, as has been evident in the preference shift from checks to credit/debit cards and the rising interest in mobile payments.² Beyond these mainstream innovations, we have also seen the introduction of virtual currencies such as Bitcoin. Regarding the evolving technology more generally, there have been changes both in the clearing and settlement technology and in the front-end technology, which uses the existing payment-clearing and settlement systems. For instance, card readers attached to mobile phones allow consumers a slightly different way to pay for goods and services while using a credit card, but the settlement technology largely remains the same. In the face of these technological advancements, it is incumbent on the Fed to understand these changes given its stake in a smoothly functioning payment system.

While payments have been evolving for hundreds of years, we need continued innovation to further improve the U.S. payment system in terms of speed, cost and safety. We can learn from other countries that have already made such improvements. For example, some countries have infrastructures in place that allow for near-real-time retail payments, including the United Kingdom and its Faster Payments Service, while others are relatively close to implementing such a system, including Australia with its New Payments Platform.³ In the U.S., continued innovation must further the country toward common goals that will best serve the U.S. public and the economy.

In light of the payment system's importance to financial stability, the public relies on the Fed to make sure that the payment system is running effectively, efficiently and safely. To that end, one of the Fed's payment system roles is to be a leader, convener and catalyst. While our role is not to dictate how the payment system will evolve, we have and will continue to bring together stakeholders to discuss and support efforts to improve the payment system, which is covered in more detail in this annual report's featured essay by our Bank's First Vice President David Sapenaro. This is a worthy goal and an appropriate role for a central bank to play.

"While payments have been evolving for hundreds of years, we need continued innovation to further improve the U.S. payment system in terms of speed, cost and safety."



James Bullard
President and CEO

FOOTNOTES

1. See Chapter 7, "[The Federal Reserve in the U.S. Payments System](#)," in *The Federal Reserve System: Purposes & Functions*, published by the Board of Governors of the Federal Reserve System.
2. See the "Mobile Payments Innovation" sidebar on Page 14 for additional reading on mobile payments.
3. For more information on near-real-time payments, see the speech by former Cleveland Fed President Sandra Pianalto on Sept. 24, 2013, "[In Pursuit of a Better Payments System](#)."



Speed, Security, Efficiency:

Improving the U.S. Payment System

Throughout its history, the U.S. payment system has undergone significant change, and today is no exception. Credit and debit cards are continuing to replace check writing. Online payments have connected consumers with merchants around the world. Mobile phones—in addition to becoming people’s personal cameras, gaming consoles, calendars and video players—are emerging as a new method of paying for goods and services.



By David Sapenaro

Yet with all these advances in technology and convenience, inefficiencies remain in the U.S. payment system. The system's speed hasn't evolved to the capabilities that many consumers are beginning to demand. Security threats are constantly emerging and challenge the integrity of the system. Many of the new payment methods are lacking the ubiquity needed for widespread efficiencies.

These technological gaps are well-known, and worthwhile collaborations and research are underway by many stakeholders—such as individuals, banks, businesses, current operators and system innovators—to address these concerns. Still, a holistic view of what would benefit everyone is key. That's why the Federal Reserve has embarked on a project to bring these stakeholders together for an end-to-end look at how to improve the U.S. payment system. This project stems from the Fed's belief that a safe, efficient, secure and broadly accessible U.S. payment system is crucial to the U.S. economy and contributes to the nation's financial stability.

In early 2015, the Fed released a paper, "[Strategies for Improving](#)

[the U.S. Payment System,](#)" detailing the desired outcomes for payment system improvements over the next several years and the strategies the Fed will pursue with appropriate stakeholders to enhance the U.S. payment system. This paper was the result of years of work with these stakeholders to identify the gaps and opportunities present in the system. By no means is the paper the end of the work to be done. In fact, one could say the real work is just beginning.

Why the Fed?

Understanding why the Fed is involved in improving the nation's payment system is important. As the nation's central bank, the Fed has a stake in ensuring that the payment system is functioning at its highest level. The 2015 paper was clear in this regard: "A U.S. payment system that is safe, efficient and broadly accessible is vital to the U.S. economy, and the Federal Reserve plays an important role in promoting these qualities as a leader, catalyst for change and provider of payment services to financial institutions and the U.S. Treasury."

The Fed serves four main roles in the payment system:

- Operator
- Regulator
- Supervisor
- Leader/catalyst

Operator

An operator in the payment system is an entity that provides direct payment system services, and the Fed has long been a provider of such services. Currently, the Federal Reserve participates through the following key offerings:

Fedwire

Fedwire is a real-time (or immediate) settlement system used by banks, businesses and government agencies for mission-critical, same-day transactions. Typically, this service is used for very large transactions. In 2014, an average day for Fedwire involved 538,000 transactions totaling \$3.5 trillion for an average value of around \$6.5 million per transaction.

FedACH

The FedACH services are used to clear and settle credit and debit transactions, typically on a one-day lag. Typical ACH transactions include direct deposit of payroll, direct payments for monthly bills

What Is the U.S. Payment System?

This report features the Federal Reserve's efforts to bring stakeholders together to examine improving the U.S. payment system, focusing on specific items such as speed, security and efficiency. But what exactly is the payment system?

A simple definition is **the means by which funds are transferred between parties**. This includes a wide range of forms—such as cash, check, credit/debit card, ACH and wire transfers—and the standards and protocols by which they are exchanged. This also involves numerous participants, including individuals, businesses, banks, rules and standards groups, technology solutions providers, payment network operators, emerging payment providers and the government, which work together to varying degrees to keep the payment system functioning.

and various federal government payments. In 2014, the Fed processed an average of 46.3 million commercial automated clearing-house transactions each day totaling \$79.2 billion. That's an average of \$1,712 per transaction.

Check Clearing

While the Fed has long been a provider of check-clearing services, the process has changed considerably over the years as check writing has declined and legislation such as the Check Clearing for the 21st Century Act (which allowed for the electronic collection of checks) has added efficiencies to the process. The Federal Reserve System operated 45 check processing sites as recently as 2003; that number was managed down to a single site in mid-2010.

National Settlement Service

Some financial institutions have agreements that allow for transactions among the institutions to be summed up and settled at once, rather than having every transaction settled individually. The National Settlement Service receives files containing the summation of these transactions and settles them for all involved institutions on the books of the Fed.

Currency Processing

The Fed is responsible for maintaining public confidence in U.S. currency. This includes supplying enough currency and coin to meet demand, maintaining the quality and integrity of the physical money in circulation and ensuring that local financial institutions have ready access to currency.

Regulator

The Fed develops and implements regulations to operationalize

various payment system legislation enacted by Congress. Examples of recent regulations include:

- Regulation CC, Availability of Funds and Collection of Checks. Among other things, this regulation governs when deposits must be available to bank customers and also the use of check images for settlement instead of physical checks.
- Regulation II, Debit Card Interchange Fees and Routing. This regulation establishes standards for assessing whether debit card fees are reasonable and proportional to transactions.

Supervisor

As one of four national banking supervision agencies, as well as the supervisor for state-chartered banks, the Fed examines the safety and soundness of the banks it supervises, including use of the payment system.

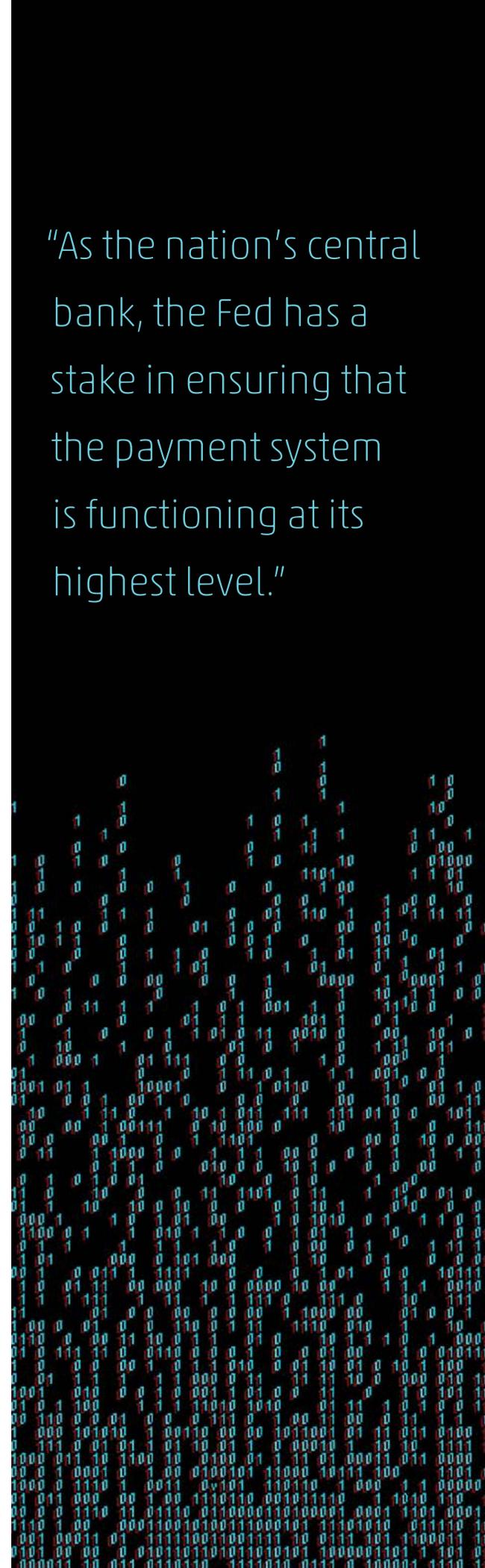
Leader/Catalyst

This final role is perhaps the most significant for the current undertaking. In its position as the nation's central bank, the Fed has the ability to bring various stakeholders together to help create a shared focus on and to commit to improving the U.S. payment system.

Traditionally, improvements in the payment system have been left to market forces, rather than government direction. Yet, as a 2013 Fed paper noted: "History shows that it is sometimes beneficial for a central coordinating body to take steps to facilitate cooperation to address network or coordination challenges that otherwise

continued on Page 10

"As the nation's central bank, the Fed has a stake in ensuring that the payment system is functioning at its highest level."



impede innovation, efficiency and other public benefits. The Federal Reserve banks believe that ubiquitous, open payment networks and/or broadly interoperable networks best serve the public interest because the more members of society who can be reached with a payment instrument, the more valuable the payment instrument is to each of the other members of society.”¹

Thus, the Fed’s involvement is based on a twofold perspective:

- The public is best served by ubiquitous, open payment networks and/or networks that can work together.
- The Fed has the ability to bring the various stakeholders in the payment system together to collaborate on the future of the payment system in the U.S.

The latter perspective is the focus of the Fed’s “leader/catalyst” role, in which it acts as a convener and provides resources to supporting initiatives.

Starting the Journey

In 2012, the Fed initiated a gap and opportunity analysis to study improving the speed and efficiency of the U.S. payment system from end to end, while maintaining a high level of safety and accessibility, with “end to end” meaning the point of payment origination to the point of receipt, including payment reconciliation and notification. This was a significant shift from the way the Fed previously examined the payment system, which was usually limited to the interbank processing space. This analysis resulted in the “[Payment System Improvement – Public Consultation Paper](#),” which was released on Sept. 10, 2013.

Following the paper’s release, the Fed gathered reactions to its content. The Fed received more than 200 responses to the paper and a general consensus that the desired outcomes captured in the paper were indeed the right ones to receive attention.

Opportunities within the System

Inefficient Payments

It’s not news that check writing has been declining for many years. However, despite seemingly falling out of favor, more than 18 billion checks were still written in the United States in 2012.² Checks remain a preferred—or at least regular—option for many individuals and businesses. Part of this stems from checks having the important attributes of ubiquity (as they are accepted as a form of payment in many, if not most, cases) and convenience.

Payment Speed and Security

There is currently no ubiquitous, convenient and cost-effective way for U.S. consumers and businesses to make real-time or even near-real-time payments from one bank account to another. While payment system speed has become faster as a result of private-sector innovation, the U.S. still lags behind many other countries in terms of real-time payments.

In addition, payment security challenges—such as data breaches, phishing attacks, spoofed websites, payment card skimming, fraudulent ATM withdrawals, computer malware and infiltration of retail point-of-sale systems—are becoming more prevalent and costly. An estimated 31.1 million fraudulent transactions occurred in 2012, with a value of \$6.1 billion.³

Legacy vs. Limited Systems

In the past several years, new payment methods have been introduced that offer promising improvements, such as faster transaction speeds. However, these are mostly still private systems that require the transacting parties to both be part of the system. With a few exceptions, nonmembers receive no benefit and are unable to take part.

On the other hand, legacy systems—such as check writing or ACH—are more ubiquitous, but lack the features of new systems that customers are increasingly demanding: real-time validation, timely notifications, assurance of payments going through and masked account details.

The Efficiency of International Payments

Typically, cross-border consumer and business payments involve much higher transaction fees and longer processing times than domestic payments. Several innovators have emerged recently with products and services that partially address these challenges, but not in a comprehensive way.

The 2013 paper “[Payment System Improvement – Public Consultation Paper](#)” summed up the gaps and opportunities in the U.S. payment system this way:

“End users of payment services are increasingly demanding real-time transactional and informational features with global commerce capabilities. Legacy payment systems provide a solid foundation for payment services; however, some of these systems (e.g., check and ACH) rely on paper-based and/or batch processes,

which are not universally fast or efficient from an end-user perspective by today's standards. The challenge for the industry is to provide a payment system for the future that combines the valued attributes of legacy payment methods—convenience, safety, and universal reach at low cost to the end user—with new technology that enables faster processing, enhanced convenience, and the extraction and use of valuable information that accompanies payments.”

Next Steps

Following the public consultation paper's release in 2013, the Fed conducted additional research on the desired outcomes and potential strategies presented in the paper, including gathering feedback from various stakeholders. The additional research culminated with the January 2015 release of the paper [“Strategies for Improving the U.S. Payment System.”](#)

The new paper presented refined versions of the five desired outcomes published in the 2013 public consultation paper. The final desired outcomes were:⁴

- **Speed:** A ubiquitous, safe, faster electronic solution(s) for making a broad variety of business and personal payments, supported by a flexible and cost-effective means for payment clearing and settlement groups to settle their positions rapidly and with finality.
- **Security:** U.S. payment system security that remains very strong, with public confidence that remains high, and protections and incident response

Is the Fed Just Going to Do It by Itself?

Additional Services?

A common question is repeatedly asked when discussions about the payment system project arise: Will the Fed simply create its own protocols and services?

The 2015 strategies paper summed up the long-standing criteria that must be met for the Fed to offer new financial services: “These criteria include the need to fully recover costs over the long term, the expectation that the new services will yield clear public benefit and the belief that other providers alone cannot be expected to provide the service with reasonable effectiveness, scope and equity.”

However, the Fed does play an integral operations role within the payment system through the services it currently provides. As part of the payment system improvement project, the Fed reviewed these offerings for potential improvements that would support the overall goal of enhancing the U.S. payment system.

Enhance the National Settlement Service

The Fed will engage in a three-phase process of improving its National Settlement Service to make it more attractive as a settlement vehicle for private-sector arrangements.

- **Phase 1:** Extend the service hours to 7:30 a.m. ET to 5:30 p.m. ET. This phase is already complete.
- **Phase 2:** By the end of 2015, move the opening time to coincide with the 9 p.m. ET opening of the Fedwire Funds Service (on the prior calendar date).
- **Phase 3:** Explore what it would take to support weekend and/or 24/7 operating hours.

Promote Greater Use of Same-Day ACH Capabilities

While most of the 87 million payments per day flowing through ACH do not require real-time authorization and clearing, some may benefit from same-day ACH processing cycles by reducing counterparty risk and/or improving speed.

Expand Risk-Management Services

The Fed will look for enhanced risk-management products to provide to users of Federal Reserve Financial Services to complement its services.

Provide the Reserve Banks' Financial Institution Customers Access to Interoperable, Secure Directory Tools

Tools offered to Federal Reserve Financial Services customers will support legacy and future payment types, such as access to an industry directory for various payments.

that keeps pace with the rapidly evolving and expanding threat environment.

- **Efficiency:** Greater proportion of payments originated and received electronically to reduce the average end-to-end (societal) costs of payment transactions and enable innovative payment services that deliver improved value to consumers and businesses.
- **International:** Better choices for U.S. consumers and businesses to send and receive convenient, cost-effective and timely cross-border payments.
- **Collaboration:** Needed payment system improvements are collectively identified and embraced by a broad array of payment participants, with material progress in implementing them.

This paper outlined five strategies the Fed will pursue with various stakeholders to improve the U.S. payment system. “The strategies will require collaboration and action from a range of payment participants. The primary strategies call for (1) sustaining our recent high level of stakeholder engagement; (2) working with payment stakeholders to identify effective approach(es) for implementing a safe, ubiquitous, faster payments capability that promotes efficient commerce, facilitates innovation, reduces fraud and improves public confidence; and (3) collaborating with stakeholders to reduce fraud risk and advance the safety, security and resiliency of the payment system.”

The strategies involve:

- Identifying effective approach(es) for implementing

safe, ubiquitous, faster payments

- Reducing fraud risk and advancing the safety, security and resiliency of the payment system
- Achieving greater end-to-end efficiency for domestic and cross-border payments
- Enhancing Fed bank payment, settlement and risk-management services
- Actively engaging with stakeholders on initiatives designed to improve the U.S. payment system

Faster System

With speed being a central concern of many payment system users, creating a faster system is a significant goal of the payment system improvement project. This was confirmed through a faster payments analysis conducted by the Fed. This analysis found that increased payment speed would initially benefit at least 29 billion transactions per year, or 12 percent of the total for the country. These transactions would be concentrated primarily in four different types:

- Person to person (for example, sending money to a friend or relative)
- Business to business (for example, just-in-time supplier payments)
- Person to business (for example, time-sensitive bill payments)
- Business to person (for example, temporary worker payroll)

One of the most visible ways the need for a faster payment system will be addressed is through the

establishment of a faster payments task force, expected to be established in mid-2015. This task force will identify and evaluate alternative approaches for implementing safe, ubiquitous, faster payments capabilities in the United States.

More Secure System

Equally important is improving the security of the payment system. As the January 2015 paper noted: “The payment system faces dynamic, persistent and rapidly escalating threats, and stakeholders are increasingly aware of the need to enhance payment security.”

Prior to the release of that paper, the Fed sponsored a payment security landscape study, which identified four weaknesses in U.S. payment system security:

- While technologies already exist that could improve payment system security, they haven’t been adopted widely enough, nor are there strong enough standards and protocols, to make the impact they are capable of.
- Continuous use and improper implementation of weaker security technologies leaves the system vulnerable.
- Fraud and payment security data are not robust enough to help with identifying security needs and designing better security measures.
- The complex regulatory environment dissuades coordination and communication among regulators, potentially creating authority or supervision gaps.

Concurrent to the faster payments task force will be a payment

"Given the large number of stakeholders in the payment system, widespread collaboration will be absolutely essential if viable progress is to be made in improving it."



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security task force, which will advise the Fed on payment security matters and determine areas of focus and priorities for future action to advance payment system safety, security and resiliency. This task force will coordinate with the faster payments task force to ensure that potential solutions are both fast and secure.

More Efficient System

Check writing has been on the decline for years, as the number of checks paid in 2012 was less than half the number in 2003. Still, as noted earlier, more than 18 billion checks were paid in 2012, with many of these checks functioning as business-to-business payments.

In addition, a persistently large number of people do not use bank

accounts or traditional financial services, which often leads to using inefficient and/or costly services for payment needs. Likewise, differing standards make cross-border payments slower and less efficient than should be otherwise possible.

Inefficiencies such as these create costs that don't otherwise need to exist. Reducing these inefficiencies could potentially drive costs down, providing a net benefit for all who operate within the payment system. One strategy being pursued involves the adoption and implementation of the ISO 20022 standard by payment and clearing participants. This standard sets forth common "languages" for conducting financial transactions, making them easier to complete

between differing systems. Several participants—including The Clearing House Payments Company, NACHA – The Electronic Payments Association, and the Accredited Standards Committee X9—are part of a stakeholder group tasked with studying implementation of this standard, which may help address efficiencies in international payments.

Domestically, the Fed will work with industry stakeholders to develop technologies and rules that foster greater ubiquity and interoperability among payment directories for person-to-person, person-to-business and business-to-business (for small businesses) payments and that address barriers to electronic payment adoption by businesses.

Mobile Payments Innovation

By David Benitez and Michael Milchanowski

Mobile payment technology, or the ability to pay for goods and services via mobile phone, has experienced a rise in adoption and popularity in the past few years. Its rise stems from companies and consumers alike looking for new ways not only to make payments more accessible and convenient, but also to help decrease certain types of fraud.

According to the 2013 Federal Reserve Payments Study, the estimated number of unauthorized

transactions (or third-party fraud) in 2012 was 31.1 million, with a value of \$6.1 billion.¹ General purpose cards—including credit, debit and prepaid cards, and ATM withdrawals—were used in the majority of these transactions, accounting for 92 percent of the number and 65 percent of the total value.

Much of this vulnerability stems from outmoded magnetic strip technology used in today's credit cards, which dates back to World War II and allows thieves to easily steal and clone payment data by reading the static information stored on each card's strip. In 2012, the major credit card networks (Visa, MasterCard, Discover and American Express) announced that they would migrate to EMV,² a more secure technology already

adopted worldwide that uses "chip" technology. To speed up the implementation of EMV cards and readers, the credit card networks will initiate a liability shift in October 2015, meaning that whoever possesses the lesser of the credit card technologies at the point of sale (merchant or card issuer) would be liable for any fraud.

Within this changing environment, multiple companies have put forth technological payment innovations that attempt to improve both security and convenience for consumers. From adding user-friendly card readers to merchant terminals to allowing payments with mobile phones through near-field communication chips (which allow devices to communicate with each other when a few inches away), payment

Collaboration from All Stakeholders

Even the best strategies are nothing more than wishes if they're not implemented and implemented well. Given the large number of stakeholders in the payment system, widespread collaboration will be absolutely essential if viable progress is to be made in improving it. The 2015 strategies paper is clear about the need for collaboration: "A real commitment of resources and representation of diverse stakeholder interests will be essential to the success of these initiatives."

Over the past few years, the Fed has demonstrated its commitment to this project through its leadership and the resources

it has committed. This level of commitment will continue to exist to see the payment system project through to fruition.⁵ As the 2015 strategies paper concludes, "The Federal Reserve is committed to working with payment stakeholders to turn this vision for the future into reality. Only through collective efforts can a faster, ubiquitous, safer, more efficient payment system be achieved for the United States."

David Sapenaro is the first vice president and chief operating officer at the Federal Reserve Bank of St. Louis. He recently completed his responsibility as the Federal Reserve's interim payments strategy director.

FOOTNOTES

1. "Payment System Improvement – Public Consultation Paper," Federal Reserve Financial Services, Sept. 10, 2013.
2. "The 2013 Federal Reserve Payments Study," Federal Reserve System, Dec. 19, 2013.
3. Ibid.
4. "Strategies for Improving the U.S. Payment System," Federal Reserve Financial Services, Jan. 26, 2015.
5. Gordon Werkema has been named payments strategy director overseeing this initiative. Werkema has been serving as the first vice president and chief operating officer of the Federal Reserve Bank of Chicago and product director for the Federal Reserve System's National Customer Relations and Support Office.

technology has gradually intertwined with continuously upgraded consumer electronics.

At the heart of this innovation surge is a security feature known as "tokenization," or the act of replacing sensitive information (credit card numbers) with a token or a nonsensitive equivalent (that is, a unique security code). These tokens are produced by the chip that is a part of EMV technology for credit cards and also mobile phone payments. The process of tokenization decreases the sharing of sensitive information with merchants, people and applications, making each purchase unique and unrepeatable.

While mobile payments have existed in the U.S. for a number

of years, the introduction of Apple Pay in 2014 has made them an increasingly common means of payment. The success of Apple Pay has sparked numerous rival companies, including Google and Samsung, to announce their own forms of mobile payments to be released in the near future. Competition and the rapid pace of mobile phone technological advancement will help ensure that advances in security and convenience reach consumers quickly.

As the payments field advances and changes, it is a certainty that companies will continue to listen to both consumer desires and industry needs. The transition from magnetic strip credit cards to more secure EMV technology is estimated to take years to

complete, but in the meantime, consumer demand will continue to drive technological innovation in hopes of bridging the current security gap.

Michael Milchanowski is a senior manager responsible for the Supervisory Policy and Risk Analysis unit within the St. Louis Fed's Bank Supervision and Regulation division.

David Benitez is a policy analyst in the Supervisory Policy and Risk Analysis unit within the St. Louis Fed's Bank Supervision and Regulation division.

FOOTNOTES

1. "The 2013 Federal Reserve Payments Study," Federal Reserve System, Dec. 19, 2013.
2. EMV stands for "Europay, MasterCard and Visa," the three companies that developed the technology.

Our Leaders. Our Advisers.



Our nation's central bank, the Federal Reserve, has three main components: the Board of Governors, the Federal Open Market Committee and the 12 Reserve banks around the country, including the Federal Reserve Bank of St. Louis. This decentralized structure helps to ensure that the diverse views and economic conditions of all regions of the country are represented in monetary policymaking.

The St. Louis Fed serves the Eighth Federal Reserve District, which includes all of Arkansas, eastern Missouri, southern Illinois and Indiana, western Kentucky and Tennessee, and northern Mississippi. The Eighth District offices are in St. Louis, Little Rock, Ark., Louisville, Ky., and Memphis, Tenn.

CHAIRMAN'S MESSAGE

GEORGE PAZ

World-class organizations are defined by certain core characteristics: expertise, innovation and a passion for serving constituents, to name a few. These same words fittingly define the Federal Reserve Bank of St. Louis, a distinguished institution for which I have the privilege of serving as chairman of the board.

After commemorating its centennial in 2014, the St. Louis Fed, along with the entire Federal Reserve System, entered a second century as an organization that is essential to the economic health of our region, our nation and the world.

The St. Louis Fed has long contributed to the economy in many vital ways. For example, it's been a leading researcher and advocate of sound monetary policy, a global provider of comprehensive economic data and analytical tools, and a voice of Main Street around the Federal Open Market Committee table.

During my three years on the St. Louis Fed's board, I have come to know and respect the Bank as an organization catalyzed by a strong research and business culture. Each day, the St. Louis Fed's staff anticipates and tackles constituents' needs with integrity and purpose. Whether by supervising financial institutions to ensure financial stability, producing cutting-edge economic research, serving as fiscal agent for the U.S. Treasury, interacting with the public through its new *Inside the Economy*[®] Museum, or producing engaging economic education curriculum for schools and community development programs, the St. Louis Fed today continues its tradition of serving diverse communities to make a positive impact on the economy for all.

This year's annual report contains many examples of how the St. Louis Fed makes a difference. A particular highlight is the leadership that the Bank has provided in the Federal Reserve System's current study on the future of the U.S. payment system. (See the main essay of this annual report.)

On behalf of the entire board of directors, I thank the St. Louis Fed's executives for their outstanding leadership and all of the employees for carrying forth the Bank's outstanding legacy and enduring commitment to serving the public.



George Paz
Chairman of the Board of Directors
Federal Reserve Bank of St. Louis



George Paz, Chairman and CEO, Express Scripts

ST. LOUIS BOARD OF DIRECTORS



George Paz, *Chairman*
Chairman and CEO,
Express Scripts
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National Corp.
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Council members represent a wide range of Eighth District industries and businesses and periodically report on economic conditions to help inform monetary policy deliberations.

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The members meet twice a year to advise the St. Louis Fed's president on the credit, banking and economic conditions facing their institutions and communities. The council's chair also meets twice a year in Washington, D.C., with the Federal Reserve chair and governors.

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The council is composed of one representative from each of the 12 Federal Reserve districts. Members confer with the Fed's Board of Governors at least four times a year on economic and banking developments and make recommendations on Fed System activities.

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St. Louis

COMMUNITY DEVELOPMENT ADVISORY COUNCIL

The council keeps the St. Louis Fed's president and staff informed about community development in the Eighth District and suggests ways for the Bank to support local development efforts.

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Development District
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Co-Founder, Thrive
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Rita Green
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Capital Investment Corp.
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Thank you to the St. Louis Fed's recent
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111 Center St., Ste. 1000
Little Rock, AR 72201
501-324-8300

Louisville Branch

National City Tower
101 S. Fifth St., Ste. 1920
Louisville, KY 40202
502-568-9200

Memphis Branch

200 N. Main St.
Memphis, TN 38103
901-531-5000

Council lists, boards of directors,
management committee and officer list
as of July 15, 2015.

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This report is also available online at:
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- Institute for Financial Literacy's **Nonprofit Organization of the Year**
- Ragan Communications **Corporate Social Responsibility Award** for Best Education/Scholarship Program
- St. Louis Regional Chamber's **Arcus Award** for achievement in Financial Services



Bank employees reached

4,511

students

from

2,033

classrooms

with **Teach Children to Save Day.**

We reached

499,875

students

through educators who attended economic education programs, such as conferences, workshops and in-service programs.

econlowdown™

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540,000

students and teachers, representing **all 50 states,** enrolled in our online economic education courses in 2014.



Our new, award-winning

Inside the Economy Museum features nearly **100** interactive displays about the economy.

Presentations by St. Louis Fed staff at more than **100** events



reached more than **10,000** attendees.

Our **@stlouised** Twitter account had

44,200 followers



and was named to *Business Insider's* list of the **102 Finance People You Have to Follow on Twitter.**

OUR PEOPLE,
OUR WORK
IN 2014



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