

Chicago Fed Letter

After the financial crisis: The future of payment innovations

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The Federal Reserve Bank of Chicago hosted its tenth annual Payments Conference, Payment Innovations in the Wake of the Financial Crisis, on May 20–21, 2010, to discuss emerging trends within the payments industry and new regulation following the financial crisis.

The participants at this year's Payments Conference discussed how evolving technology and emerging payment products both challenge and complement legacy payments while providing opportunities for nonbank firms to compete against and collaborate with traditional payment providers—like large financial institutions and card networks. Moreover, given the flurry of recent legislation affecting the payments industry, the conference also addressed the legislation's policy implications for payment innovations.

Legacy payments and new technology

The U.S. payments market has always been extremely dynamic because both financial institutions and nonfinancial firms frequently introduce new payment technologies and services. Indeed, Glenn Fodor, Morgan Stanley, said that investors are attracted to the payments industry precisely because its innovations are likely to provide them with future sources of growth. However, as Stephanie Swain, Best Buy, observed, the recent financial crisis has decreased consumers' trust in financial institutions, willingness to take on debt, and readiness to use products that may result in large fees or penalties. Some payment providers, including retailers like Best Buy, have become more conservative in their sales strategies in response to such changes. For example, Best Buy is responding to the tight consumer credit market with old financing tactics, such

as layaway and rent-to-own strategies, Swain explained.

Similarly, Ron Shevlin, Aite Group, argued that in the face of regulatory challenges and large-scale data breaches that threaten consumer confidence, financial institutions have been slow to react or have not reacted with the most efficient strategy. Countering this point, Jeff Semenchuk, Citigroup Inc., explained how financial institutions are currently using new technologies to implement innovative approaches to banking, which ultimately better serve their clients. These efforts, he noted, are designed to move banks away from an unsustainable business model that relies too heavily on fee income from their customers (e.g., fees for overdrafts). Semenchuk said that Citibank is developing new electronic products that allow consumers to do what they normally would with traditional payment instruments like cash or checks—e.g., to send money; make commercial transactions; and budget, convert, and store currency. He cited a trial run in which Citibank partnered with telecommunication providers and merchants in Bangalore, India, to implement near field communication (NFC)¹ payments, resulting in increased revenues for each partner. John Brady, USAA Bank, said that, like Citibank, his bank has taken advantage of new technologies. Brady explained his bank has leveraged Apple's, BlackBerry's, and Google's mobile operating systems and Check 21² imaging

Materials presented at the conference are available at www.chicagofed.org/webpages/events/2010/payments_conference.cfm.

to create applications that allow customers to interact with the bank remotely and deposit checks using smart phones. Remote deposit has been very popular for the bank's customers, who are primarily highly transient military personnel and their families.

Payment platforms

Traditional payment providers, like Citibank and USAA Bank, are using online and mobile phone technologies to update their established offerings (and develop new ones). Yet, at the same time,

with Internet capabilities and that the applications written specifically for these phones often have better designs than those for desktop and laptop computers. Given the number of individuals who own cellular phones and the degree to which they already depend on these devices, mobile phones are one major platform that may support new payment instruments created by both traditional and nascent payment providers. Evans predicted that payment providers' software developers would continue to build new payment instruments on existing

Casares hypothesized that innovation in mobile payments and in some other payment areas tends to originate outside of financial institutions, in part because new nonbank players are willing to use business models that provide a more symbiotic relationship between merchants and their customers. Gray Taylor, National Association of Convenience Stores, supported this hypothesis by explaining that small retailers are indeed focused on reducing their costs while maintaining convenience for their customers. He noted that in the past even if merchants could provide discounts for customers using cash or similar payment instruments, many did not do so. Moreover, merchants could not provide discounts for other payment types, despite the fact that merchants must pay their banks more to process credit card transactions.³ Some merchants are willing to adopt emerging technologies that allow them to accept popular payment methods that cost less to process than either credit or debit cards.

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other firms are increasingly leveraging these same technologies in conjunction with legacy products and networks to launch services that meet changing consumer demands. Often these demands have not yet been met by the traditional players. Several existing operating systems and payment networks can serve as *platforms*—i.e., foundations on which developers can build electronic applications that allow consumers to access existing services in new ways and through new devices. In his keynote address, David Evans, Market Platform Dynamics, explained how several proprietary platforms with large customer bases and well-established infrastructures—such as card networks and computer operating systems—have recently enabled outside parties to develop applications for them. While these additional applications increase the capabilities of the original platforms and therefore the traffic on them, they also allow smaller niche providers to reach a large number of customers quickly. These technological developments have provided a way for smaller tech-savvy firms to offer new services directly to users of certain popular existing platforms, such as Apple iPhones or network-branded payment cards (i.e., credit, debit, and prepaid cards).

In line with Evans's remarks, Bryan Derman, Glenbrook Partners, noted that many Americans now have mobile phones

platforms; therefore, the future of the industry depends on which players ultimately control these platforms.

Nonbank innovation

Although large financial institutions and card networks are increasingly focused on innovation, much of the recent innovation in the payments space has originated from nonbanks and smaller players. According to Wences Casares, Bling Nation (a mobile payment services company), NFC transactions speed up check-outs and provide additional convenience for the consumer, but banks have not offered these capabilities to their account holders in the past. Therefore, Bling was able to launch a successful NFC-based business that connects banks, merchants, and consumers in smaller communities. Gary Palmer, Network Branded Prepaid Card Association, said that, similar to NFC payments, some prepaid products are popular because they address consumer demands that are not met by the traditional financial system. He noted that some consumers want to conveniently segment their spending into different categories. Also, outside of the U.S., many individuals want to store their money in U.S. dollars to protect their savings from unstable local currencies. Not seeing any helpful products at banks, many individuals, here and abroad, have turned to prepaid cards to meet these needs.

While nonbanks do strive to address unmet financial needs, these new firms' offerings do not necessarily compete with banks' services; they may even complement financial institutions' current services. For instance, Bling Nation allows its partner banks to offer NFC payment capabilities to their customers. Dan Schatt, PayPal, discussed another example, explaining how PayPal could help banks capture revenue from person-to-person payments. According to Schatt, consumers tend to make person-to-person payments with cash. If they use PayPal instead, the financial institutions could obtain increased revenue from these transactions.

A new risk environment

While nonbanks' innovations offer great potential for new markets, security concerns about them remain. Increased scrutiny of such products and widely publicized large-scale data breaches have led to a renewed focus on payments security measures. Additionally, according to Peter Burns, Heartland Payment Systems Inc., as technology allows more participants to enter the payments system and the number and speed of transactions to increase, the system's vulnerability also

increases. Ellen Richey, Visa Inc., echoed this notion when she explained that emerging payment instruments that allow consumers to access funds in new ways also provide more ways to access funds *without* proper authorization, thereby increasing the need for stronger security measures.

While conference participants agreed that the new technology-driven payment innovations create more potential for fraud, these innovations simultaneously provide ways to enhance payments security and combat fraud. As Burns noted, new technology that decreases transaction times offers better protection and facilitates faster communication between payment providers and consumers, helping the industry reduce fraud. Janet Estep, NACHA (an electronic payments association), argued that automated clearinghouse (ACH) payments are more secure than paper checks. She noted that the volume of ACH transactions on the NACHA network has grown 18% annually, but almost 80% of financial institutions report fewer than ten fraud attempts through ACH transactions per year—and only 11% of those attempts result in financial losses. In addition, Mike Urban, FICO, described how his firm uses neural network models to track consumer spending across the payments system and identify abnormalities to help detect fraud. Richey noted that consumers want new tools to protect themselves, so Visa uses real-time text messages about ongoing transactions. This service has helped decrease the time it takes to detect fraud and has increased trust in the payments system.

Urban stated that sophisticated cybercriminals are quite flexible in their strategies to steal information and funds. Their adaptability increases the complexity of using technological innovation to fight fraud. For example, when the industry began to protect data that were stored in retailers' databases, hackers opportunistically shifted to stealing data exchanged during transactions. Richey and Estep agreed with Urban that collaboration among payment providers, merchants, consumers, and the public sector is necessary to combat fraud on all fronts. Fraud is an important policy challenge because policymakers and

financial firms have an obligation and responsibility to make sure that the public can trust the payments system.

Regulation and payments governance

Decreasing fraud, fostering more innovation, sharing costs more equitably among all the parties using the payments system, and helping consumers make better choices all require coordination within the industry. However, in the U.S., payments have been largely self-regulated and there is no single central payments body that addresses these issues. Gene Amromin, Federal Reserve Bank of Chicago, noted that here, recent regulation has centered on providing consumers with more information about the costs of their credit cards; obtaining explicit consent from customers to use certain services (while disclosing potential penalty fees); and regulating pricing—as demonstrated by the Credit Card Accountability, Responsibility, and Disclosure (CARD) Act.⁴

Despite the U.S. Congress's desire to promote transparency and empower the consumer, conference panelists debated the merits of forcing consumers to make choices about a myriad of payment card features. Mark Furletti, of law firm Ballard Spahr LLP, explained that requiring consumers to make explicit choices about each payment card feature creates an overwhelming sign-up process. As an example, he cited the possibility of requiring prepaid card customers to make decisions regarding the ability to overdraft, arbitration venues in case of dispute, contact through their mobile phones, and other issues.

In the end, all these choices may *not* help consumers assert control over their finances because people often are unable to anticipate their future behavior, choices, and circumstances, explained Piyush Tantia, ideas42 (a project based at Harvard University). Consequently, new payment products that are designed to help consumers make more-consistent choices and meet their financial goals over time should be developed. Tantia discussed a foundation that placed attractively packaged prepaid *savings* cards (cards that cause funds to be deposited into a savings account when they are used

to purchase goods) near retail checkouts in India. Impulse purchases—which are normally detrimental to efforts to save money—would help consumers using such cards to save funds and meet their own long-term financial goals.

Additional discussions revolved around the efficacy of financial disclosures—i.e., whether or not they help consumers understand financial products. According to Omri Ben-Shahar, University of Chicago Law School, disclosures have been shown to be ineffective in changing consumers' decisions because consumers are not able to comprehend the details and gauge the risks. He recommended condensing the myriad of terms for various products into something more easily understood by the consumer—e.g., a simple grading system that would summarize the terms and/or risks associated with particular products.

In contrast to Ben-Shahar, Tantia posited that consumers do understand the terms but give little importance to negative consequences (such as penalty fees) because they are not able to predict how often they will incur them. Victor Stango, University of California, Davis, advocated basing payments regulation on empirical research that shows how consumers actually make their payment choices.

Charles L. Evans, *President*; Daniel G. Sullivan, *Executive Vice President and Director of Research*; David Marshall, *Senior Vice President, financial markets*; Jonas D. M. Fisher, *Vice President, macroeconomic policy research*; Daniel Aaronson, *Vice President, microeconomic policy research*; William A. Testa, *Vice President, regional programs, and Economics Editor*; Helen O'D. Koshy and Han Y. Choi, *Editors*; Rita Molloy and Julia Baker, *Production Editors*; Sheila A. Mangler, *Editorial Assistant*.

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Currently, this type of research is in short supply.

In addition to consumer choice and product features, recent regulation addresses the pricing and distribution of payment card costs. Card fees and fraud rates have, until now, been self-regulated aspects of the payments industry. The conference occurred soon after the introduction of Senator Richard Durbin's (D-IL) amendment to the then-pending Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, which mandates that the Federal Reserve Board set interchange fees on debit card transactions.⁵

Richard Epstein, University of Chicago Law School, predicted that the impact of limiting interchange fees to the cost of processing each transaction would be negative. In order for card networks and financial institutions to provide these valuable services, he said that they must be allowed to charge prices that cover their start-up costs in addition to the

marginal cost of each transaction. Ronald Mann, Columbia Law School, said that regulation for debit cards is less desirable than for credit cards because there are more alternatives to debit, such as cash and checks, and therefore more competition. Further, unlike credit cards, debit cards do not increase consumer debt. Sujit (Bob) Chakravorti, Federal Reserve Bank of Chicago, noted the tension between promoting innovation and creating a pricing structure that both merchants and consumers find acceptable.

Conclusion

There was consensus among most conference participants that both public and private sectors must work together to address issues of fraud and pricing in payment products, particularly card products, and to empower consumers to make decisions that move them toward their financial goals. However, a few conference participants worried that excessive regulation could eliminate innovative products that help some consumers.

That said, the new regulatory regime provides an explicit role for the public sector, including the Federal Reserve System, in shaping specific payment practices. The Dodd-Frank Act has become law: President Obama signed the bill on July 21, 2010. Under this new law, the Federal Reserve Board has been given authority not only to set debit card interchange fees but also to develop "fraud-related standards" for payment cards. This is the first time that the Federal Reserve has been explicitly instructed to play a direct role in combating payment card fraud. These new authorities granted to the Federal Reserve Board partially answer the question of payments governance. While the public sector has been relatively uninvolved in these issues in the past, this has now changed. As new regulations and standards are implemented with these new mandates, the Federal Reserve will seek to determine the best strategies to ensure a safe and efficient payments system.

¹ NFC is short-range, high-frequency wireless communication technology enabling nearby devices to exchange data.

² Check 21 refers to the Check Clearing for the 21st Century Act; this law enables banks to handle more checks electronically, making check processing faster and more efficient. For more details, see www.federalreserve.gov/paymentsystems/check21_faq.htm.

³ The recently passed Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 gives merchants greater flexibility to allow for price differentiation among payment instruments (e.g., cash, checks, debit cards, and credit cards).

⁴ The CARD Act, passed in 2009, limits card issuers' ability to change interest rates and requires them to clearly post interest rates and the amount of time it would take to

pay off a credit card balance if only the minimum payment is made. It also mandates opt-ins for overdraft programs for debit accounts, among other provisions.

⁵ Interchange fees are per debit (or credit) transaction fees paid by the merchant's bank to the card network's bank; these fees are typically passed on to the merchant via merchant discount fees.