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# Payments System Research at the Federal Reserve Bank of Kansas City

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Stuart E. Weiner  
Federal Reserve Bank of Kansas City

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# Topics

- Overview of Payments System Research (PSR) function
  - Summary of specific research interests and projects
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# Federal Reserve System

- Kansas City is one of twelve regional Reserve Banks in addition to the Board of Governors
  - All Reserve Banks and Board of Governors have research departments; not all research departments have payments research groups
  - Those that do:
    - Board of Governors (general)
    - New York (wholesale)
    - Boston (consumer preferences)
    - Chicago (emerging payments)
    - Philadelphia (payment cards)
    - Kansas City (retail policy issues)
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# Organization

- PSR is one of three functions in the Economic Research Department
    - Payments System Research
    - Macroeconomics and Monetary Policy Research
    - Banking and Financial Market Research
  - Mission: To conduct policy-oriented research on retail payments issues
  - Currently six members: four economists, one industry analyst, one research associate
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# Activities

- Conduct research on retail payments issues, both domestic and international
  - Communicate results of research to central bank, industry, and academic audiences via publications and presentations
  - Sponsor conferences: Interchange (2003), Nonbanks (2005)
  - Publication outlets
    - Books
    - Articles: FRBKC *Economic Review*; academic journals; FRBKC *Briefing*
    - Conference proceedings
    - Working papers
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# Research Focus

- Research has focused on four broad areas
    - Credit, Debit, and ATM markets
      - Market structure, interchange issues
    - Nonbanks in the Payments System
      - Prevalence, risk issues
    - Emerging Payments
      - Stored-value cards, mobile payments
    - Consumer Preferences
      - Reward programs
  - Implications for efficiency, safety, accessibility?
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# Credit, Debit, and ATM Markets

- The United States has witnessed a striking shift in payments from paper to electronics in recent years
  - Payment cards, in particular, showing strong growth, especially debit cards (both signature and PIN-based)
  - Industry has been marked by heavy consolidation of debit networks and controversy over interchange pricing in credit and debit markets
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# Credit, Debit, and ATM Markets

## ■ Selected Publications

- Hayashi, Sullivan, Weiner, *A Guide to the ATM and Debit Card Industry*, FRBKC Book, 2003.
  - Weiner, Wright, “Interchange Fees in Various Countries: Developments and Determinants,” *Review of Network Economics*, December 2005.
  - Hayashi, “A Puzzle of Payment Pricing: Why are Merchants Still Accepting Card Payments?” *Review of Network Economics*, March 2006.
  - Wang, McAndrews, “Microfoundations of Two-Sided Markets: The Payment Card Example,” FRBKC Working Paper, October 2006.
  - Hayashi, Weiner, “Interchange Fees in Australia, the UK, and the United States: Matching Theory and Practice,” *FRBKC Economic Review*, 3<sup>rd</sup> Quarter 2006.
  - Wang, “Market Structure and Credit Card Pricing: What Drives the Interchange?,” FRBKC Working Paper, December 2006.
  - Hayashi, Sullivan, Weiner, *A Guide to the ATM and Debit Card Industry: 2006 Update*, FRBKC Book, 2006.
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# Credit, Debit, and ATM Markets

- Selected findings/observations (U.S.)
    - Divergence in growth patterns
      - ATM industry has matured
      - Credit card industry growing modestly
      - Debit card industry expanding rapidly
    - Debit card industry
      - Strong growth driven by increased consumer acceptance, heightened merchant incentives, heavy promotion
      - Visa's market share of overall debit market now over 60 percent
    - Interchange controversy -- How will it be resolved?
      - Litigation? Legislation? Regulation? Industry change?
    - Data breaches and fraud on the rise – U.S. as a target?
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# Nonbanks in the Payments System

- Nonbanks are becoming increasingly prominent in retail payments systems throughout the world
  - Rising nonbank presence particularly evident in the United States
    - “New” participants: e.g., PayPal, Google
    - “Traditional” participants: e.g., First Data, TSYS
  - What roles do nonbanks play in the payments chain?
  - Are nonbank participants subject to appropriate supervision?
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# Nonbanks in the Payments System

## ■ Selected Publications

- Bradford, Davies, Weiner, *Nonbanks in the Payments System*, FRBKC Book, 2003.
  - Bradford, Weiner, “Who’s Processing Your Payments?”, *FRBKC Briefing*, August 2005.
  - Sullivan, “The Supervisory Framework Surrounding Nonbank Participation in the U.S. Retail Payments System: An Overview,” *FRBKC Working Paper*, April 2006.
  - Sullivan, “Risk Management and Nonbank Participation in the U.S. Retail Payments System,” *FRBKC Economic Review*, 2<sup>nd</sup> Quarter 2007.
  - FRBKC/ECB, “Nonbanks in the Payments System: European and U.S. Perspectives,” *FRBKC Conference Proceedings*, May 2007.
  - Sullivan, Wang, “Nonbanks in the Payments System: Innovation, Competition, and Risk—A Conference Summary,” *FRBKC Economic Review*, 3<sup>rd</sup> Quarter 2007.
  - FRBKC/ECB, “Nonbanks and Risk in Retail Payments,” *ECB/Bank of England Conference Proceedings*, November 2007 (forthcoming).
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# Nonbanks in the Payments System

- Selected findings/observations
    - U.S.
      - Nonbanks are pervasive
      - Nonbank business relationships with other participants are complex and intertwined
      - Nonbanks are rarely directly involved in settlement activities
      - Many, but not all, major nonbanks are supervised
    - U.S. and Europe
      - Nonbank presence in retail payments is substantial and growing
      - The regulatory framework surrounding nonbanks is uneven both within and across countries
      - Nonbanks are currently subject to less oversight than banks
      - In the U.S., there have been significant private-industry efforts to manage risks. In Europe, the Payment Services Directive is intended to harmonize legal frameworks.
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# Emerging Payments

- As in many other countries, the United States has seen an increase in new types of payments in recent years
    - P2P, e.g., PayPal
    - Conversions, e.g., check to ACH, debit card to ACH
    - Stored-value, e.g. general purpose gift cards, payroll cards
    - Mobile payments and banking
    - Check 21
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# Emerging Payments

## ■ Selected Publications

- Weiner, “A New Era,” FRBKC *Briefing*, March 2003.
  - Bradford, “Payment Types at the Point of Sale: Merchant Considerations,” FRBKC *Briefing*, December 2004.
  - Sullivan, Wang, “Internet Banking: An Exploration in Technology Diffusion and Impact,” FRBKC Working Paper, November 2005.
  - Bradford, “Contactless: The Next Payment Wave?” FRBKC *Briefing*, December 2005.
  - Bradford, “Paper, Plastic....or Phone? FRBKC *Briefing*, December 2006.
  - Wang, “Technological Innovation and Market Turbulence: The Dot-Com Experience,” *Review of Economic Dynamics*, January 2007.
  - Bradford, “Stored-Value Cards: A Card for Every Reason,” FRBKC *Briefing*, June 2007.
  - Bradford, Hayashi, “Complex Landscapes: Mobile Payments in Japan, South Korea, and the United States,” FRBKC *Briefing*, October 2007.
  - Sullivan, Braun, McAndrews, Roberds, “Understanding Risk Management in Emerging Retail Payments,” FRBNY *Economic Policy Review* (forthcoming).
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# Emerging Payments

- Selected findings/observations (U.S.)
    - In many or most cases, “new” payment instruments are new front ends to existing infrastructures
    - Market test is challenging
      - Roll-out period is critical; perceived risks can be a significant hurdle
    - Emerging payments that have caught on
      - Online bill payment
      - PayPal P2P
      - Stored-value cards (gift cards, payroll cards, health-spending cards)
      - Check conversion to ACH (at point of sale, biller lockbox, merchant back-office, online)
    - Emerging payments that have not caught on
      - Bank-offered P2P
      - ACH credit-push payments to online merchants
    - Emerging payments perhaps on the cusp
      - Contactless, mobile phone payments
    - Nonbanks have often played a critical role as innovators
    - Confusion, uncertainty over applicable laws and regulations
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# Consumer Preferences

- With the shift from paper to electronics has come a desire to gain a better understanding of consumer preferences
  - What attributes are most important to consumers in choosing and using various payment instruments, e.g., convenience, cost, safety?
  - PSR has focused, in particular, on reward programs associated with credit and debit cards
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# Consumer Preferences

## ■ Selected Publications

- Hayashi, Klee, “Technology Adoption and Consumer Payments: Evidence from Survey Data,” *Review of Network Economics*, June 2003.
  - Bradford, Cundiff, “Payments Fraud: Consumer Considerations,” FRBKC *Briefing*, May 2006.
  - Hayashi, Ching, “Payment Card Rewards Programs and Consumer Payment Choice,” FRBKC Working Paper, July 2006.
  - Hayashi, Ching, “Consumer Bill Payment: Will Electronic Bill Payments Continue to Grow? (forthcoming).
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# Consumer Preferences

- Selected findings/observations (U.S.)
    - Consumer adoption of electronic forms of payments, such as debit cards and electronic bill payment, is correlated with adoption of other new technologies, such as computers
    - Transaction characteristics, such as the transaction value, the physical characteristics of the point of sale, and a bill's frequency and value variability, affect consumer payment choice
    - Credit and debit card rewards greatly affect cardholding consumers' payment choice at the point of sale. However, only a small percentage of cardholders would switch from card-based payment methods (credit/debit cards) to paper-based payment methods (cash/checks), even if rewards were no longer offered
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# Some Open Research/Policy Issues

- Domestic

- Appropriate role of Federal Reserve in retail payments
- Gaps in nonbank regulatory coverage
- Obstacles to electronification of B2B payments
- Convergence of small-dollar (ACH) and large-dollar (Fedwire-CHIPS) transactions

- International

- Regulatory challenges of globalization of payments industry
  - Impact on public confidence of growing data security, fraud incidence
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# Contact Information

- PSR website:

[www.kc.frb.org/home/subwebs.cfm?subweb=9](http://www.kc.frb.org/home/subwebs.cfm?subweb=9)

- Email: [stuart.e.weiner@kc.frb.org](mailto:stuart.e.weiner@kc.frb.org)

- Phone: 816.881.2201
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