



Consumer Behavior and Payment Choice:

How and Why Do Consumers Choose Their Payment Methods?

Cash
Credit cards
Checks
Debit cards
Stored value cards
Internet banking
ACH transactions

October 27–28, 2005

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How and Why Do Consumers Choose Their Payment Methods?

Federal Reserve Bank of Boston

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While a good deal is understood about the supply side of the retail payments market, very little is understood about the demand or consumer side, especially why consumers choose one payment method over another. This conference will bring together economic researchers and payments system participants to explore what we know and don't know about how consumers choose among payment methods and about the implications of their decisions for saving, consumption, and portfolio allocation.

Thursday, October 27

5:00 p.m. **Reception – Cityside Lounge**

6:00 p.m. **Dinner – Harborview Dining Room**

Opening Remarks – Perspectives on Emerging Payments

Jeffrey C. Fuhrer

Senior Vice President and Director of Research
Federal Reserve Bank of Boston

Sarah G. Green

Executive Vice President
Federal Reserve Bank of Boston

7:15 p.m. **What Do You Think?**

A fun-filled, voluntary electronic survey that explores how conference participants – consumers – view the central issues and ideas on consumer payment behavior to be discussed during the conference.

7:45 p.m. **Keynote Address – Consumer Behavior and the Payments Landscape**

Richard Oliver

Executive Vice President and
Retail Payments Product Manager
Federal Reserve Bank of Atlanta

8:30 p.m. **Adjournment**

Friday, October 28

Conference sessions will be held in the New England Room unless otherwise noted.

7:30 a.m. **Continental Breakfast – New England Room Bridge Area**

8:30 a.m. **Consumer Payment Behavior Overview**

This overview will summarize the existing literature on consumer payment behavior: what we know and don't know, what we need to know, and the implications for public policy.

Stacey L. Schreft

Vice President and Economist
Federal Reserve Bank of Kansas City

9:15 a.m. **Who's Afraid of the Cashless Society? Belgian Survey Evidence**
by **Ellen Loix, Roland Pepermans, and Leo Van Hove**

This session will summarize the results of a 2004 survey of Belgian consumer payment practices. The survey focused on payment methods at the point of sale: cash, debit cards, electronic purses, credit cards, and retailer cards. The paper relates adoption and usage of the various payment methods to respondents' demographic and financial characteristics, their propensity to adopt new technologies, and supply-side factors.

Presenter: **Leo Van Hove**
Associate Professor of Economics
The Free University of Brussels

Discussants: **Elizabeth C. Klee**
Economist
Board of Governors of the Federal Reserve System

Leon Majors
President
ESP Consulting Group

10:15 a.m. **Break – New England Room Bridge Area**

10:30 a.m.

Understanding Consumer Behavior at the Point of Sale

Consumers make millions of payments at retail establishments, also known as point of sale, or POS transactions. Fifty years ago, consumers had only two POS payment options — cash or check. Now they have many choices: credit card, check, cash, store-issued charge card, stored-value card, debit card, or EFT. How do they decide which payment method to use? Is cost a major factor? What about demographic characteristics? Does the dollar value of the transaction determine the selection? What has caused consumers to switch from checks to electronic payments? How are incentives (e.g. miles) influencing payment behavior? Are these incentives distorting payment behavior in a way that is costly for the retailer?

Jonathan Zinman will open this session with a brief overview of his paper “Debit or Credit?”

Moderator: **Tony Hayes**
Managing Director, Financial Services
Dove Consulting

Panelists: **Tim Attinger**
Senior Vice President
Product Innovation and Development
VISA USA

Denis Bouchard
Director of Payment Services
Wal-Mart Stores, Inc.

Lorraine Fischer
Senior Vice President, Payment Strategies
Wachovia Bank

Joseph Garbarino
Vice President, Financial Services
Wegmans Food Markets

Jonathan Zinman
Assistant Professor
Department of Economics
Dartmouth College

General Discussion

11:45 a.m. **Lunch – Boston Room**

Remarks

Cathy E. Minehan

President and Chief Executive Officer
Federal Reserve Bank of Boston

1:00 p.m.

Credit and Identity Theft

by **Charles M. Kahn and William Roberds**

The quintessential crime of the information age is identity theft, the malicious use of personal identifying data. In this paper, the authors present a model of identities and their use in credit transactions. The incidence of identity theft represents a tradeoff between a desire to avoid costly and/or invasive monitoring of individuals, on the one hand, and the need to control transaction fraud, on the other. The results suggest that technological advances will not eliminate this tradeoff.

Presenter: **William Roberds**
Research Economist and Policy Advisor
Federal Reserve Bank of Atlanta

Discussants: **Seth Berman**
Assistant U.S. Attorney
U.S. Attorney's Office for the District of
Massachusetts

Nobuhiro Kiyotaki
Professor of Economics
London School of Economics

2:00 p.m.

Understanding Consumer Bill Payment Behavior

Bills have traditionally been paid by writing checks and sending them with statements by U.S. mail. Increasingly, bills are being paid by automated clearing house debits. More recently, the Internet has created new bill payment methods such as online banking and online credit card payments. These new options offer consumers convenience, speed, and the ability to better control payment timing. How do consumers decide whether or not to adopt different forms of bill payment? Are the same consumers using different methods depending on the type of bill or the amount? Will check ever disappear as a bill payment method?

Tansel Yilmazer will begin this session with a summary of “The Determinants of Consumers’ Adoption of Internet Banking,” a paper authored by Yilmazer, Byoung-Min Kim, and Richard Widdows.

Moderator: **Steve Ledford**
Chief Executive Officer
Global Concepts

Panelists: **Robert Pedersen**
Vice President and Treasurer
United States Postal Service

Patty Thorell
Vice President, Payment Processing
Comcast Cable Communications

Robert Wilson
Industry Initiative and Payment Strategy Executive
Global Treasury Services Group
JPMorgan Chase

Tansel Yilmazer
Assistant Professor
Purdue University

General Discussion

3:15 p.m. **Break – New England Room Bridge Area**

3:30 p.m. **Transforming Payment Choices by Doubling Fees on the Illinois Tollway**
by **Gene Amromin, Carrie Jankowski, and Richard D. Porter**

On January 1, 2005, Illinois doubled the highway toll for travelers paying with cash, but kept the price unchanged for those paying electronically. This paper combines a theoretical model of payment choice with empirical analysis based on this rare natural experiment of differential pricing depending on the method of payment: cash versus electronic payment. An actual response to a price change allows the authors to estimate the sensitivity of consumer payment demand to prices.

Presenter: **Richard D. Porter**
Senior Policy Advisor
Federal Reserve Bank of Chicago

Discussants: **Steven Jacques**
Director of Business Development
Massachusetts Turnpike Authority

Marc Rysman
Assistant Professor of Economics
Department of Economics
Boston University

4:30 p.m.

Conference Summary

This session will summarize what we have learned during the conference. What are the immediate needs for further research? What are the implications for Federal Reserve policy?

Victor Stango
Associate Professor of Economics
Tuck School of Business Administration
Dartmouth College

5:00 p.m.

Adjournment and Closing Reception – Economic Adventure

This conference is sponsored by the Emerging Payments Research Group (EPRG) at the Federal Reserve Bank of Boston. EPRG was established at the end of 2004 with the purpose of understanding consumer payment behavior. This is the first conference sponsored by EPRG.

Tim Attinger is senior vice president of product innovation and development for Visa USA. In this role he leads a group responsible for analyzing industry, competitor, and stakeholder trends through research, market intelligence, and competitor information. The group also establishes direction and strategy for Visa's product innovation and development activities—such as marketplace segmentation and pilot management—for Visa's consumer, small business, and commercial products, as well as for emerging product and service platforms. Prior to joining Visa in 1999, Attinger served as director of strategic planning and market development for the electronic funds services (EFS) division of First Data Corp. and as an associate with the strategy management consultancy Windermere Associates in San Francisco. He received a B.A. from the University of Alabama and an M.A. from the University of North Carolina at Chapel Hill.

Seth Berman is an assistant U.S. attorney in the internet crime unit of the United States Attorney's Office for the District of Massachusetts. In this capacity he prosecutes computer hacking and intrusion, identity theft, bank fraud, and other white-collar crimes. Prior to his service as a federal prosecutor, Berman was a partner at McDermott, Will, and Emery, specializing in white-collar criminal defense and civil litigation. He also served for five years as an assistant district attorney in the New York County District Attorney's Office under the leadership of Robert Morgenthau.

Denis Bouchard is director of payment services for Wal-Mart Stores, Inc. He is primarily responsible for overseeing card acceptance at the point of sale. Bouchard has been with Wal-Mart since 1995, holding various positions within the accounting and treasury departments. He received a B.S. in finance from the University of Hartford.

Lorraine E. Fischer is a senior vice president and director of payment strategy at Wachovia Corporation. Fischer currently assists in the evaluation and development of Wachovia's payments business from a corporate perspective. She has nearly 30 years of diverse experience and responsibilities in payments, retail/business deposit-account product management, sales, operations, and marketing. During her career, she has been heavily involved in the formation, operation, and consolidation of regional ATM networks and the growth of off-line debit card acceptance and usage. Fischer has served on the board of directors, including as chair, for Yankee 24, the electronic banking network of New England, and on numerous committees for regional and national networks. She holds a B.A. from Skidmore College and an M.B.A. from the University of Connecticut.

Jeffrey C. Fuhrer is a senior vice president and the director of research at the Federal Reserve Bank of Boston. Prior to assuming the role of research director, Fuhrer served as vice president, economist, and head of the Open Market Macro/International Section. Fuhrer also served as a senior economist at the Board of Governors of the Federal Reserve System in Washington, D.C. His recent research has focused on the development of macroeconomic models of inflation, long-term interest rates, monetary policy, consumer spending, and the Phillips curve. He has recently published studies on the importance of habit formation in consumer spending decisions, the persistence of inflation, the interaction between monetary policy and long-term interest rates, and the failure of new rational expectation models to explain business-cycle fluctuations. Fuhrer holds an M.A. and a Ph.D. in economics from Harvard University and a B.A. from Princeton University.

Joseph A. Garbarino is vice president of finance at Wegmans Food Markets Inc., where he directs financial operations as a New York certified public accountant. He has been with the company for 23 years, holding various accounting and finance positions. He currently serves on the Food Marketing Institute's Electronic Payments Systems (EPS) Committee. Prior to joining Wegmans, Garbarino worked in public accounting and with the New York State Department of Taxation and Finance. He earned a joint B.S. in mathematics and accounting from St. John Fisher College and an M.B.A. in finance from the Rochester Institute of Technology.

Sarah G. Green is an executive vice president at the Federal Reserve Bank of Boston, where she is responsible for payments, Treasury, technology, and support services. Previously, she was staff director for the development and implementation of the Federal Reserve System's national payments policies and strategies. Green also served as the national retail payments product manager, with responsibility for the Fed's check and automated clearing house services. She has participated in various national payments strategy forums, including the U.S. Treasury Steering Group on the Future Payments System, the Bank Administration Institute (BAI) Operations and Technology Council, and the National Automated Clearing House Association's Vision 2000 Task Force. Prior to joining the Fed, Green worked as a consultant at Abt Associates. Green obtained a B.A. from Mount Holyoke College and an M.B.A. from the Sloan School at the Massachusetts Institute of Technology.

Anthony D. Hayes is a recognized expert on electronic funds transfer (EFT), ATM and debit systems, and financial services research. As vice president of the financial services practice of Dove Consulting, a division of Hitachi Consulting, he provides in-depth analysis and guidance to clients. He has worked on projects involving ATM strategy development, including identification of revenue and cost initiatives to maximize returns, development of line-of-business strategies and corporate strategy for a multi-function payments provider, EFT network and processor evaluation for a major bank, and analysis and design of a compelling debit rewards proposition. Additionally, Hayes recently managed *The 2005 Debit Card Fraud and Performance Benchmarking Study* and *The 2005 Study of Consumer Payment Preferences*, a comprehensive review of how consumers pay in stores, on the Internet, and for bills. He also leads the bi-annual *ATM Deployer Study*, and he is a frequent expert witness and speaker on ATM and payments-related issues. Hayes graduated with First Class Honors from Oxford University, where he also received his M.A.

Steven Jacques leads the business development team for the Massachusetts Turnpike Authority. A ten-year veteran with MassPike, Jacques' major duties as director of business development involve overseeing the Massachusetts Turnpike's 11 service plazas, its McDonald's and Exxon contracts, and its three tourist information centers, along with MassPike's marketing and non-toll revenue programs, including the Fast Lane program. Prior to joining MassPike, Jacques worked in the private sector for the Coca-Cola Company for 15 years, holding a variety of operational, sales, and marketing positions. He is a graduate of Northeastern University.

Nobuhiro Kiyotaki is both a senior economist at the Federal Reserve Bank of New York and a professor in the economics department at the London School of Economics. He has previously taught at the University of Wisconsin, the University of Minnesota, and the Massachusetts Institute of Technology. His research focuses on monetary economics and macroeconomics, and specifically on saving and investment, credit cycles, and the impacts that macroeconomic fluctuations can have on microeconomic saving and spending decisions. An associate editor of *Economic Letters*, Kiyotaki has won both the Japanese Economic Association's Nakahara Prize and the European Economic Association's Yrjö Jahnsson Award for his research contributions. He holds a B.A. from the University of Tokyo and a Ph.D. from Harvard University.

Elizabeth C. Klee is an economist in the division of monetary affairs at the Federal Reserve Board of Governors. She has written extensively on payment system issues, focusing on both retail and wholesale payment systems. Her past projects include using grocery store scanner data to explore consumer payment choice at the point of sale. Klee received her A.B. from Princeton University in 1995 and her Ph.D. from New York University in 2000, both in economics.

Steve Ledford, a financial services executive with more than 20 years of experience in the industry, is chief executive officer of Global Concepts, a consulting firm specializing in payment systems consulting. Ledford's work has focused on payment systems and services in the U.S. and international markets, including check processing, ACH, electronic funds transfer, electronic check clearings, and cash management. He has provided consulting services to clients worldwide, including the creation of a methodology for measuring payment system volumes for the Federal Reserve, evaluations of private-sector ACH opportunities for U.S. payment organizations, development of check and electronic cash management products with major U.S. banks, and interbank data exchange (electronic cheque presentment) development with U.K. clearing banks. Ledford was formerly with the Lafferty Group, a London-based publishing and research firm specializing in international retail banking and payment systems. He is the author of several books and articles on financial services and payment systems and he speaks regularly at a number of industry conferences.

H. Leon Majors III is the president and founder of ESP Consulting Group, a member of the Phoenix Marketing International family of research companies, specializing in survey data analysis of emerging payments systems for its clients. Majors has 25 years of experience in market research, covering a vast array of financial services and technology markets. Prior to starting ESP Consulting, Majors held senior consulting positions with PSI Global, Mentis Corporation, and Trans Data Corporation. He has served on the faculty of the BAI Graduate School of Banking for Operations and Technology, and his opinions are frequently quoted in various publications, including *American Banker*, *BAI Banking Strategies*, *ATM & Debit News*, and *The Washington Post*. Majors is also a noted speaker with appearances at industry conferences, including the National Postal Forum, Bank Administration Institute (BAI), NACHA, and TAWPI.

Cathy E. Minehan is president and chief executive officer of the Federal Reserve Bank of Boston and the current chair of the Conference of Presidents of the Federal Reserve Banks. An expert in payment systems, she serves on the Payment System Policy Advisory Committee, a group of Reserve Bank officials that considers issues related to systemic risk in national and international payment systems. Within the New England region, Minehan takes a leadership role in issues relating to structural economic development. She chairs the board of directors of the United Way of Massachusetts Bay, is vice-chair of the Boston Private Industry Council, which has responsibility for school-to-career, welfare-to-work, and career center programs, and serves on the boards of many civic, professional, and educational organizations. Named New Englander of the Year by the New England Council in 2002, she is the recipient of numerous awards and honorary degrees. She holds a B.A. from the University of Rochester and an M.B.A. from New York University.

Richard Oliver is an executive vice president with the Federal Reserve Bank of Atlanta and for the last seven years has served as retail payments product manager for the Federal Reserve System. In this capacity, he has responsibility for managing the Fed's check and ACH businesses nationwide. Having joined the Bank in 1973, Oliver previously served as a planning analyst, the administrator of the automated clearing house, and chair of the Federal Reserve's electronic payments implementation task force. More recently he has held lead roles in the System's software development, automation services, electronic payments services, and business development and check software. He has also served as staff director for the Federal Reserve System's policy committee for financial services, where he was responsible for coordinating integrated financial management, project management, and strategic planning for all the Federal Reserve's payments services nationwide. Oliver is a member of the Federal Reserve Bank of Atlanta's Management Committee.

Robert J. Pedersen has served as vice president and treasurer of the United States Postal Service since March 2, 2002. In this position, Pedersen oversees all Postal Service financing and investments, bank relations, payment technologies, business evaluations, and the collection and disbursement of more than \$95 billion annually. An 18-year veteran of the Postal Service, Pedersen has held a number of positions of increasing responsibility in finance, ranging from investment officer to assistant treasurer. In these positions, he designed and implemented the two largest restructuring initiatives in postal history, including reallocating the debt portfolio to save 95 percent in interest expenses. Pedersen is a past president of the Washington Association of Money Managers, and he currently serves as a volunteer on a number of professional and academic boards. He received a B.A. in economics from the College of William and Mary and an M.A. in economics from George Mason University, and he holds a Certified Treasury Professional (CTP) designation.

Richard D. Porter is a vice president and senior policy advisor in the research department of the Federal Reserve Bank of Chicago, where he directs the payments studies group and oversees economic research and policy analysis on payments systems. His articles have been published in a variety of scholarly journals including *the American Economic Review*, *Econometrica*, and *the Journal of Money, Credit and Banking*, among others. Before joining the Bank, Porter served as an economist at the Board of Governors for over three decades, and prior to that, as an assistant professor of economics at Ohio State University. He has received the Board of Governors' special achievement award and has been recognized by the U.S. Secret Service for his contribution to the International Currency Audit Program. In May 2004, the Board of Governors sponsored a Festschrift-type conference: "Models and Monetary Policy: Research in the Tradition of Dale Henderson, Richard Porter, and Peter Tinsley." Porter received his Ph.D. in economics from the University of Wisconsin.

William Roberds is a research economist and policy advisor with the Federal Reserve Bank of Atlanta. His areas of responsibility include basic research and policy analysis, focusing primarily on the fields of payment systems, macroeconomics, and econometrics. His research has been published in academic journals, including the *Journal of Monetary Economics* and the *Journal of Money, Credit, and Banking*, as well as in various Federal Reserve System publications. He is a frequent speaker and discussant at economic conferences, and he is a past coordinator of the conference “The Economics of Payments.” Prior to joining the Atlanta Fed in July 1987, Roberds was an assistant professor at Brown University (1982-84) and an economist at the Federal Reserve Bank of Minneapolis (1984-87). From March through May 1999, he was a visiting scholar at the Bank of Japan. Roberds holds a Ph.D. in economics from Carnegie-Mellon University.

Marc Rysman is an assistant professor of economics at Boston University, where he researches industrial organization, firm competition, and product differentiation. He has written about firm coordination and differentiation in a standards war using the example of 56K modems, competition in the market for yellow pages, and the determinants of payment card usage. He is currently an associate editor of the *International Journal of Industrial Organization*, and he has twice won grants from the Networks, Electronic Commerce, and Telecommunications (NET) Institute for his research. Rysman received a B.A. in economics from Columbia University and a Ph.D. in economics from the University of Wisconsin at Madison.

Stacey L. Schreft is a vice president and economist in the research department at the Federal Reserve Bank of Kansas City, where her research focuses on a variety of topics in macro, monetary, and payment economics. Since her dissertation, which studied the implications for monetary policy of the mix of cash and credit used in transactions, her publications have included articles on the implications of payment system usage and financial intermediation for monetary policy, developments with electronic consumer payments, the effects of consumer credit controls, the identification of credit crunches, and the fragility of an economy's financial system. Before joining the Kansas City Fed, Schreft served as assistant professor of economics at Michigan State University, associate research officer and economist at the Federal Reserve Bank of Richmond, and visiting professor of finance at the Wharton School. She received a B.A. in economics from Smith College and an M.A. and Ph.D. in economics from the University of Minnesota.

Victor Stango is an associate professor of economics in the Tuck School of Business at Dartmouth. Before joining the faculty in 2004, he worked at the Federal Reserve Banks of Chicago and New York and at the business schools of the University of Chicago, University of California at Berkeley, and University of Tennessee. Stango's research focuses on competition in network industries, particularly in the ATM and credit card markets, and his work has appeared in *American Economic Review*, *The Review of Economics and Statistics*, *The Journal of Industrial Economics*, *The Journal of Law and Economics*, and other academic journals. An associate editor of the *International Journal of Industrial Organization*, Stango has also won several teaching awards. He holds a B.A. in economics and political science from the University of Pennsylvania and a Ph.D. from the University of California at Davis.

Patricia M. Thorell is vice president of the payment processing department at Comcast Cable Communications. She has more than 18 years of experience in the payments area at Comcast. In her tenure with the company, Thorell has been responsible for the transition and integration of payment technologies and products during an aggressive record of acquisitions. She is responsible for the development, support, and integration of technologies supporting over 22 million payments per month. A Certified Treasury Professional, she speaks on Treasury topics at national and regional forums. Thorell holds a B.S. in accounting from La Salle University.

Leo Van Hove is an associate professor of economics at Vrije Universiteit Brussel (Free University of Brussels), where he teaches courses in monetary economics, Internet economics, and electronic commerce. His current research interests include electronic money, network economics, and the use of currency. He has published extensively on these and other subjects in national and international journals, such as the *Journal of Money, Credit, and Banking*, *International Journal of Electronic Commerce*, *De Economist*, *Netnomic*, *Energy Economics*, and *European Journal of Operational Research*. He also maintains a comprehensive reference database on electronic purses as part of the ePSO web site of the European Central Bank.

Robert E. Wilson leads the electronic payments strategy and industry initiatives at JPMorgan Chase, helping to drive industry payment agendas in support of the firm's strategy. He has 25 years of experience in cash management operations, marketing, sales, and product management. He most recently supported sales and product management for the Bank's consumer payments solutions business unit, focusing on the transition of paper-to-electronic consumer bill payment channels. Prior to joining JPMorgan Chase, Wilson was senior vice president and group executive of product management at Wachovia, where he was responsible for domestic and international cash management services.

Tansel Yilmazer is an assistant professor in the department of consumer sciences and retailing at Purdue University. Her research interests include family decision-making, consumer credit, saving, and consumption. Yilmazer's current research focuses on the factors affecting the financial well-being, wealth accumulation, and saving choices of households, and the factors affecting the availability of credit to small businesses and consumers. She has earned the American Council on Consumer Interests' best paper award for her joint work with Amanda Lyons, "How Does Marriage Affect Allocation of Assets in Women's Defined Contribution Plans?" and she serves on the AEA's Committee on the Status of Women in the Economics Profession. Yilmazer received her Ph.D. in economics from the University of Texas at Austin. Prior to her graduate work at Austin, she completed her B.A. in business administration and her M.A. in economics at Bogaziçi University in Istanbul.

Jonathan Zinman is an assistant professor of economics at Dartmouth College, where he researches household finance, consumer choice, behavioral economics, and issues of asymmetric information. Prior to his position at Dartmouth, Zinman worked as an economist at the Federal Reserve Bank of New York. His recent publications have focused on the elasticity of demand for consumer credit, information asymmetry in the credit card market, and changes in portfolio choice due to credit access. In addition to his research, for which he has received multiple National Science Foundation grants, Zinman has also served on the Massachusetts Community Development Finance Corporation. He earned his Ph.D. at the Massachusetts Institute of Technology.



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