

# A Summary of the Conference On Consumer Transactions and Credit

**I**n March of this year, the Federal Reserve Bank of Philadelphia and the Wharton School of the University of Pennsylvania, in association with the *Journal of Financial Intermediation*, sponsored a conference on research issues involving consumer transactions and credit. This article offers a summary of the papers presented at the conference.

Consumers today have more financial options for saving, borrowing, spending, and investing than ever before. Yet little is known about consumers' decisions about how much to save, which types of assets to invest in, how much to borrow, which types of debt to incur, and which instruments to use to make payments. Similarly, little is known about how firms price the financial instruments consumers choose to use. This intellectual neglect of consumer finance, and especially consumer credit, is somewhat surprising, given that debt owed by households represents over 25 percent of total credit-market debt outstanding and that the outstanding volume of consumer credit, including mortgages, exceeds the volume of U.S. government debt.

To begin to address these issues and to encourage more research in the field of consumer finance, the Federal Reserve Bank of Philadelphia and the Wharton Financial Institutions Center, in association with the *Journal of Financial Intermediation*, sponsored a

one-day conference at the Philadelphia Reserve Bank on March 23. Five research papers and two addresses were presented to an international group of economists, who discussed consumer credit and transaction behavior. \*

In his opening address to conference participants, Federal Reserve Bank of Philadelphia President Anthony M. Santomero suggested that the lack of research on consumer financial behavior in part "reflects the relative simplicity of most U.S. household portfolios before the 1990s. But an explosive period of financial innovation in the last two decades and the rapid growth in consumers' wealth in the 1990s have introduced many more households to many more financial options."

President Santomero said more research is needed. "This conference is just the first of many efforts that we at

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\* The papers are available on our web site at [www.phil.frb.org/econ/conf/program.html](http://www.phil.frb.org/econ/conf/program.html).

the Federal Reserve Bank of Philadelphia plan to make to advance the consumer credit research agenda," he said. "We hope to shed light on the state of research and to spotlight areas of potential future contributions."

As he noted, the Philadelphia Fed has a particular interest in the area, since some 40 percent of consumer credit card activity emanates from Delaware banks in the Third Federal Reserve District. To underscore this interest, the Bank has established a Payment Cards Center that will serve as a focal point for investigating issues central to this dynamic sector of the financial services industry. The conference, proceedings of which are summarized below, represents an important first step in that direction.

## CONSUMER RESPONSE TO CHANGES IN CREDIT SUPPLY

The credit card market remains a relatively understudied area of consumer finance. Nicholas S. Souleles, of the Wharton School, presented some interesting findings on the behavior of credit card borrowers, concluding that liquidity matters. His paper, "Consumer Response to Changes in Credit Supply: Evidence from Credit Card Data," co-authored by David B. Gross, formerly of the Graduate School of Business, University of Chicago, is based on analysis of a unique data set of several thousand individual credit card accounts followed monthly for 24 to 36 months. Souleles reported that according to their empirical work, "increases in credit limits for credit card borrowers generate immediate and significant increases in debt," especially for people who are already close to their limit. This

suggests that these credit limits are a binding liquidity constraint. However, even people who have not borrowed enough on their credit cards to be near their limits start borrowing more when credit card issuers increase their credit limits.

This finding is consistent with theories about precautionary savings. Consumers worry not only about credit constraints that are already binding but about the possibility that they will face a binding constraint in the future and will not be able to borrow and consume as much as they would like. Consumers want to keep some cash on hand, including some of their available credit, to act as a buffer against unexpected emergencies. But when their credit limits rise, only part of the increase is reserved for the buffer; it is optimal for them to consume some of the increase.

Souleles indicated that some of their other results, however, are not consistent with current theories of consumer savings behavior. For example, many of the people who are borrowing on their credit cards hold relatively large balances in their low-interest checking and savings accounts. Gross and Souleles found that “one-third of borrowers have over one month’s worth of income in liquid assets, which is more than typically needed for cash transactions.” These funds could be used to pay off high-interest credit card debt without sacrificing much interest income.

Another interesting result is that in contrast to most other studies, their research also indicates that consumers’ credit card debt is particularly sensitive to changes in credit card interest rates, especially to large declines in rates. This might explain the widespread use of teaser rates. The discussant, Paul S. Calem, of the Federal Reserve Board, suggested that further analysis of the effect of teaser rates on credit card borrowing would be an interesting avenue for future

research. Souleles said their analysis also showed that consumers seem to respond to a reduction in a credit card rate by switching balances from other cards to the low-rate card. So consumers appear to be sensitive enough to interest rate changes to overcome the costs associ-

tude and significance of switching costs. In their paper, the authors develop an empirical model that is able to quantify the importance of switching costs as well as customers’ probabilities of switching from one firm to another, even when customer-specific data are absent.

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ated with switching balances from one card to another. Such switching costs were the subject of another paper presented at the conference.

#### **ESTIMATING SWITCHING COSTS**

One of the factors often pointed to in explaining why credit card interest rates are relatively sticky and generally only somewhat responsive to changes in market interest rates is that there appear to be large costs associated with switching accounts. But these switching costs have been difficult to quantify. In “Estimating Switching Costs and Oligopolistic Behavior,” Moshe Kim and Doron Kliger, both of the University of Haifa, and Bent Vale of the Central Bank of Norway, present a method for estimating switching costs for bank customers. Their research is based on aggregate data, since customer-specific information is typically not available.

In his presentation, Kim discussed the theoretical literature on switching costs, which indicates how such costs can influence firms’ pricing behavior. But because micro-level data on individual transactions are nearly impossible to come by, researchers have had difficulty in estimating the magni-

The model, which was estimated using aggregate data on banks that operated in Norway from 1988 to 1996, focused on the market for bank loans. Bank lending is a good candidate for study, since long-term relationships and repeated contacts among banks and their customers — factors that characterize bank lending — may be a source of switching costs.

The study’s empirical results confirm the importance of switching costs in bank lending, with the estimated magnitude of switching costs differing across various subsamples of the banks. For the entire sample, switching costs average 4.1 percent, which is about one-third of the market average interest rate on loans. But switching costs are found to decrease with bank size, down to 2.1 percent for banks with 60 or more branches. This decrease in the size of switching costs may occur because the customers of large banks tend to be large companies. These firms are often publicly traded and enjoy greater market mobility than small retail customers. Consistent with this result is the finding that in the sample, customers’ relationships with their banks ranged between 16.7 years at small banks down to 11.3 years at large banks. Kim and his

co-authors also find that the customer lock-in generated by the switching costs is valuable to banks: locked-in customers add nearly 25 percent to banks' value.

The discussant, Steven A. Sharpe, of the Federal Reserve Board, suggested that the authors try to measure the loan price-cost margin more precisely, since it is a crucial variable in their model. In particular, Sharpe was concerned that the measure used could reflect differences in loan risk, which could differ by bank size, as well as differences in market power, and that the imprecise measurement of the price-cost margin could be influencing the results.

### **BANK CONSOLIDATION AND CONSUMER LOAN INTEREST RATES**

Another paper at the conference also examined banks' loan pricing behavior. In "Bank Consolidation and Consumer Loan Rates," Charles Kahn and George Pennacchi, of the University of Illinois, and Ben Sopranzetti of Rutgers University, examine whether banks change their pricing of consumer loans after bank mergers and whether the pricing behavior differs for different types of consumer loans.

The recent wave of mergers in the banking industry has spurred a number of researchers to examine the impact of mergers on potentially vulnerable bank customers. But as Sopranzetti explained, to date, most studies have focused on the supply and pricing of small-business loans and consumer deposits. In their paper, the authors shed new light on the effect of bank consolidation on the pricing of auto loans and unsecured personal loans.

In particular, while rates on personal loans tend to rise at banks in the market following a bank merger, rates on automobile loans tend to fall. The authors attribute this difference to

the scale economies that exist in the auto loan market and the fact that there is strong competition from nonbank lenders for auto loans; hence, the merger does not represent an increase in banks' market power in the auto loan market. Thus, consumers in the market for new auto loans are likely to benefit from a merger, since prices fall, while those seeking unsecured personal loans are not likely to see better pricing options.

Sopranzetti reported on other findings of their analysis: (1) Leader-follower pricing behavior is more widespread in automobile loan markets than in personal loan markets. In other words, if one bank changes its auto loan rate, other banks are likely to follow it by changing their rates. This is consistent with the greater competition found in auto loan markets. The authors suggest that higher consumer switching costs in the personal loan market might make the personal loan rate set by a given bank less responsive to its competitors' rates. (2) Personal loan rates are stickier than automobile loan rates, in the same

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way that consumer deposit rates tend to be sticky, that is, not very responsive to changes in the overall level of market interest rates. And, consistent with empirical research on consumer deposits, personal loan rates are more rigid in more concentrated markets. (3) Both automobile and personal loan rates tend to respond asymmetrically to increases and decreases in market rates. Banks

are slower to lower consumer loan rates when warranted by declines in other market rates than they are to raise consumer loan rates when other market rates rise.

The discussant, Leonard I. Nakamura, of the Federal Reserve Bank of Philadelphia, indicated that personal loans are much more heterogeneous across banks than are auto loans and that this might be influencing the results. He also suggested that having a theory about how banks' pricing behavior would change after a merger would be helpful in interpreting the results. Conference participants suggested that a more complete consideration of market competition would be a useful extension. For example, how do the special characteristics of auto finance subsidiaries affect the bank market for auto loans? How does unsecured credit card debt come into play in understanding the market for personal bank loans?

### **PERSONAL BANKRUPTCY AND THE LEVEL OF ENTREPRENEURIAL ACTIVITY**

Another area relevant to the study of consumer finance is the issue of bankruptcy. In "Personal Bankruptcy and the Level of Entrepreneurial Activity," Wei Fan of the University of Michigan and Michelle J. White of the University of California San Diego examine the effect of the provisions in bankruptcy law on entrepreneurial activity. Their paper is fitting for a conference on consumer finance, since, in many cases, it is very difficult to disentangle a small business's finances from that of the owner's.

Small businesses, as well as consumers, can file for bankruptcy under Chapter 7 of the federal bankruptcy code. Debts of noncorporate firms are considered personal liabilities of the entrepreneur/owner in the event of a business failure. The law requires that the entrepreneur give up assets above a

fixed bankruptcy exemption level for repayment to creditors, but all their future earnings are exempt from the obligation to repay. This “fresh start” provision lowers the ultimate risk of starting a business, since more of the entrepreneur’s assets will be protected in the event the business fails. So the exemption provides a form of “wealth insurance” to the business owner, and higher exemption levels could potentially encourage the formation of more new businesses. The fact that the exemption levels are set by states and vary widely, especially the exemption for the debtor’s house (the homestead exemption), provides a natural laboratory for studying whether bankruptcy exemptions have a significant economic effect on entrepreneurship.

The authors find empirical support for the idea that the bankruptcy system is a factor in a worker’s decision to be self-employed rather than to work for others. Fan and White find: (1) The probability that families that own homes are self-employed is 35 percent higher if families live in states with unlimited homestead exemptions rather than low exemptions. (2) Families that are homeowners are 22 percent more likely to start businesses if they live in states with higher or unlimited, rather than low, homestead exemptions. And they are more likely to organize their businesses as noncorporate rather than corporate. (3) One possible negative effect of higher exemptions is that they may encourage more bankruptcy filings, but the authors do not find that entrepreneurs are more likely to terminate businesses if they live in states with unlimited rather than low homestead exemptions.

In her presentation, White commented on the proposed new federal bankruptcy legislation and possible implications based on this research. The proposed legislation focuses on reducing abuses by relatively well-off individual debtors. However,

Fan and White’s research suggests an unintended consequence of adopting these reforms could be a reduction in the level of self-employment by U.S. households.

The discussant, Mitchell Berlin, of the Federal Reserve Bank of Philadelphia, generally applauded the paper for extending what is generally considered a consumer issue to the environment of small business and entrepreneurship. At the same time, he also made the point that while high exemptions may support small-business formation, they may just as likely reduce the supply of credit to borrowers, which would mitigate any positive effect on small-business formation. In addition, he pointed out that it was still an open question whether self-employment necessarily means more economic growth or whether it reflects employment redistributed from larger firms.

#### **THE COSTS AND BENEFITS OF TRANSACTIONS PRIVACY**

Another issue that’s become increasingly important to consumers is whether the privacy of their transactions is being protected. Rapid advances in information technology have dramatically lowered the cost and increased the speed of record keeping and transmission of information. The Internet has not only affected the cost of transmitting information but also broadened the nature of potentially available information, including information stored on personal computers. All of these factors have led to undeniable increases in convenience and welfare to consumers, but they have also fueled the public debate on privacy, particularly Internet privacy.

In their paper, “A Theory of Transactions Privacy,” Charles M. Kahn, of the University of Illinois, James McAndrews, of the Federal Reserve Bank of New York, and William Roberds, of the Federal Reserve Bank of Atlanta, develop a model to examine

the tradeoffs between the costs and benefits of transactions privacy. In their model, privacy means the concealment of potentially useful information, but concealment also potentially bestows benefits. As long as contracting is flexible and the initial rights to the

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information are clearly assigned, Coase’s theorem would suggest that privacy laws would not be necessary. Once property rights are initially assigned to a party (either one), the parties will bargain, making appropriate side payments to one another, so that the outcome chosen regarding whether to reveal or conceal information will be the one that has the largest total benefit to both parties. (The initial assignment of rights will affect the distribution of those benefits.)

However, the authors argue that there are good reasons to believe that the assumptions of Coase’s theorem wouldn’t apply in our current transactions environment. For example, it is difficult to commit to not using information once it becomes known, and currently, neither the law nor technology clearly assigns rights to transactions information. The authors show that in the current environment, the initial assignment of rights over private information could have economic consequences.

As McAndrews pointed out in his presentation, murky rights to trans-

action information provide incentives for parties to develop technologies to control information. This could result in a race to create technologies to conceal information (for example, anonymous electronic money) or to reveal information (for example, Internet “cookies”). Clearly defining rights to transaction information would forestall wasteful investments in technology to control information.

William L. Lang, of the Office of the Comptroller of the Currency, complimented the authors on developing a formal model with which to

address the privacy issue. He did question whether the model was rich enough for policy analysis. For example, in the model, parties are assumed to be aware of when transaction information is disclosed and what information is disclosed. However, in many cases, people do not know that information has been disclosed. While the Gramm-Leach-Bliley Act requires financial institutions to disclose information sharing, nonfinancial firms are not required to do so. Lang also thought that the paper overstated the rights of consumers under Gramm-Leach-Bliley.

## PAYMENT SYSTEM COMPETITION

Jean-Charles Rochet, of Toulouse University, France, presented the conference’s keynote luncheon address, “Payment Systems Competition.” Rochet’s talk was based on his ongoing research on payment systems, which he is carrying out with his colleague Jean Tirole. His remarks focused on their research-in-progress on competition between different types of payment systems: those structured as open associations of banks, like Visa and MasterCard, and those structured as closed systems, like American Express and Discover. An important and still unanswered question is whether such competition will lead to more efficient usage of payment cards. The Rochet-Tirole model is an important contribution to the study of payment systems, and it is applicable to other environments, such as competition between interbank large-value payment systems like CHIPS and Fedwire, or competition between credit cards and debit cards.

## SUMMARY

The research on payment systems by Rochet and Tirole, along with the other work presented and discussed at the conference, represents an important step in meeting the challenge posed by President Santomero in his opening address to the conference. In discussing the current state of the literature, President Santomero emphasized that “we need to develop new theories if we hope to explain the economic rationale for and the impact of various transactions media, like credit cards, debit cards, and smart cards, which are much more complicated than our traditional characterization of money.” We hope that this conference and the work of the Federal Reserve Bank of Philadelphia’s Payment Cards Center will inspire other researchers to join in this effort. 

