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The Growth of Paperless Money: Retail Payments in the United States Continue to Evolve

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The use of electronic payment methods has increased rapidly over the last decade. Recent studies shed greater light on the forms these payments are taking – and why checks still serve a vital function for certain transactions.

Increasingly, consumers and businesses are turning to electronic and other non-cash forms of payments, like debit cards. As a result, in 2001 the Federal Reserve System began the Retail Payments Research Project to estimate, among other things, the annual number and value of alternative retail payments in the United States.[1] This project has provided a much clearer and up-to-date picture of changing payments practices of households and businesses than previously existed. This *Economic Brief* examines the results of the most recent studies which were published in 2007.

The report on electronic payments instruments examined two main components – "core" electronic payment instruments and prepaid cards such as gift cards. The study also looked at emerging payment technologies, including online bill payment and person-to-person (P2P) payments such as PayPal, the latter of which are charged to a credit card or routed through the Automated Clearing House (ACH) network.

The report found that core electronic payments grew from 44.1 billion transactions in 2003 to 62.7 billion in 2006, which amounts to a compound annual growth rate of 12.4 percent during that period.[2] When the most common form of prepaid transactions are included, total electronic payments for 2006 rose to 65.8 billion transactions.

Another interesting observation, though not discussed in the report, is how different segments of the population use non-cash payment methods. For instance, age is a strong predictor of payment instrument preference, as younger consumers are less likely to use cash. Payment preference also varies by ethnicity – the Latino population, for instance, is more likely to use cash than other population segments. Adoption of cash substitutes can also vary geographically.

Yet, despite these specific differences, there are strong overall trends that illustrate the average consumer's shift away from the use of cash and checks. Those trends are detailed below, grouped by payment technology.

CORE ELECTRONIC PAYMENTS

The core electronic payments category consists of general-purpose credit cards, private label credit cards, Personal Identification Number (PIN) debit cards, signature debit cards, ACH, Electronic Benefits Transfer

(EBT) cards, and emerging payment technologies. The primary sources for the information studied are major credit card industry associations and processors; Electronic Funds Transfer (EFT) networks (which link automated teller machines and point-of-sale debit card acceptance devices to accounts at depository institutions); federal government agencies; and other entities that can provide accurate and reliable data on electronic payments originated in the United States.[3]

Among core electronic payments, PIN debit cards accounted for the most significant percentage growth in terms of both the number of transactions and total dollar value. PIN debit payments rose from 5.3 billion transactions in 2003 to 9.4 billion in 2006, a growth rate of 20.6 percent. The total dollar value rose from $204.3 billion to $348.6 billion during the same period, a year-over-year increase of 19.5 percent.

Second in percentage growth to PIN debit card transactions were ACH transactions. The number of ACH payments grew from 10.5 billion to 18.1 billion from 2004 to 2007, or by 20 percent year over year. Transactions over the ACH network come from several sources, including direct deposits for payroll, IRS tax refunds, pension benefits, child-support disbursements; direct payments for insurance premiums, utility bills, tuition, subscriptions/memberships, and mortgage and other loan payments; transactions via ACH debit cards, such as those being developed by large supermarket chains; P2P payments such as PayPal; and more.

The value of ACH payments increased an average of 18.1 percent per year – from an estimated $86.7 trillion in 2004 to $142.7 trillion in 2007. Meanwhile, the average value of ACH payments fell from $8,279 to $7,896, a reflection of the increase in the proportion of ACH payments that are relatively low-value transactions.

Behind PIN debit card and ACH transactions in terms of percentage growth were signature debit, EBT, general-purpose credit card, and private label credit card payments. Private label credit cards – which include department store, gas, and other merchant-issued cards – were the only category among core electronic payments to see a decrease in the number of transactions, falling from 3.8 billion in 2003 to 2.8 billion in 2006.

The study reports that the decline in private label card use is to be expected as card usage patterns in recent years have shifted away from private label cards and toward general-purpose credit card and debit card payments. As a result, several large portfolios and operations of retailers such as Sears, Kohl's, and Neiman Marcus have been sold to a number of financial institutions and non-bank organizations.

PREPAID CARDS

Prepaid cards, first introduced as replacements for paper gift certificates, today represent a broad and growing payment category. The advent of prepaid cards in the mid- to late 1990s – an innovation pioneered by the movie rental company Blockbuster to the mass market in 1995 – completed the scope of card-based payment options, the study notes, in that consumers can now choose to pay later (with credit cards), pay now (with debit cards) or pay before making a purchase (with prepaid cards).

Collectively, the participating card associations, EFT networks, and payments processors accounted for about 42 percent of the number of payment transactions and 42 percent of the dollar value of prepaid card purchases that originated in the United States in 2006.[4] Retailer gift cards remain the largest category among prepaid cards. These "closed loop" cards have been adopted by nearly all major merchants, from supermarkets to department stores to coffee shops to convenience stores. In 2006, closed loop prepaid transactions numbered 3.1 billion and were valued at $36.6 billion.

What drove this growth? Closed loop prepaid cards, the study notes, provide benefits to retailers through lessening the need for post-holiday price discounting, decreasing check-out line waiting time, and increasing incremental profits as a result of expired or broken cards. The latter seems to be consequential: Estimates vary, but anywhere from 20 percent to 40 percent of prepaid card value is unspent, according to the Fed study.

Compared with credit and debit cards, the prepaid card industry is still in the early stages of development, despite the rapid adoption of closed loop cards by merchants. Yet several financial institutions have also entered the prepaid card industry by issuing "open loop" prepaid cards. These prepaid cards, which bear logos for Visa, MasterCard, American Express, or those of EFT networks, do not have to be redeemed at a specific retailer but can instead be used at any retailer that accepts traditional credit or debit cards. Newer prepaid applications include payroll and healthcare cards. Open loop "rechargeable" cards, which give the holder the ability to add money to the card at a later date and use the card as a store of value, are expanding and are typically targeted at segments of the population least likely to have bank accounts.

Recent growth has been seen in the number of states that use prepaid cards as a way to provide benefits through government-run welfare programs. Use of these sorts of cards can result in cost savings – such as eliminating the need to spend money to print a benefit check and mail it – and greater efficiency. Fraud among government prepaid benefit programs also remains relatively low. In 2006, state-issued prepaid cards

accounted for 88.4 million transactions worth $3.2 billion. The average transaction was $36.

EMERGING PAYMENT TECHNOLOGIES

Several new products offer various front-end payment methods to consumers yet still utilize traditional funding and settlement systems behind the scenes. Some examples include online bill payment; P2P payments such as PayPal; deferred payment transactions such as Bill Me Later; transponders such as EZPass, which may charge payments to a credit card; and ACH debit cards.

Emerging payment technologies for 2006 were used in over 6 billion transactions and totaled $1.23 trillion. About 3.45 billion of those transactions were bill payments that totaled $1.19 trillion.

The type of payment technologies available to consumers continue to grow. New products offered include Google Checkout, which seeks to offer a P2P alternative to industry leader PayPal.

CHECKS

The use of checks has continued to shrink. The number of checks written in the United States decreased from 36.6 billion to 29.8 billion between 2004 and 2007. But the value of check payments was relatively unchanged during the same period: $41 trillion and $41.4 trillion, a growth rate of 0.4 percent. The average amount per check increased $274, from $1,118 to $1,392. The overwhelming majority of those checks, about 24.4 billion valued at a total $38.8 trillion, were paid through commercial banks, with an average per check value of $1,592.

The highest percentage of check payers were consumers (58 percent) while the highest percentage of check payees were businesses (at 78 percent). But consumer-written checks account for 19.6 percent of the total value of check payments, while businesses write checks accounting for 77.8 percent of total check value. Businesses are both the heaviest writers and receivers of check payments in dollar terms, with business-to-business checks accounting for 58.6 percent of the total value of check payments. The average value of consumer-to-business remittance checks was $360, while the average value of business-to-business remittance checks was $2,351. Overall, more than a third of all checks were written for $50 or less, and more than 80 percent of all checks were for transactions of $500 or less. So while check usage continues on its downward trend, it appears that there are some uses for which electronic payments have not yet provided a good substitute for checks. ■

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ENDNOTES

[1] Three studies were performed in 2001: the Electronic Payment Instruments Study, the Depository Financial Institution Check Study (DI), and the Check Sample Study (CS). The first two studies were repeated in 2004 in order to track and compare shifts in payment methods, while all three studies were repeated in 2007. The Electronic Payment Instruments Study was performed by Dove Consulting, a division of Hitachi Consulting. The 2007 DI Study and 2007 CS Study were performed by Global Concepts and the Federal Reserve System. This *Economic Brief* is based on the 2007 studies' findings or drawn directly from the studies.

[2] All growth rates mentioned in this *Economic Brief* are compound annual growth rates.

[3] Sixty-five out of 73 potential organizations participated in the core electronic payment category of the study. Collectively, these participants accounted for an estimated 99.8 percent of the payment transactions and 99.9 percent of the dollar value of electronic payments originated in the United States in 2006.

[4] The study reported that, unfortunately, it was not possible to obtain data from some of the largest prepaid organizations. In cases where organizations chose not to participate, the study's project team developed estimates for the missing data using a wide range of sources.

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