DISCUSSION PAPER
PAYMENT CARDS CENTER

Supply- and Demand-Side Developments Influencing Growth in the Debit Market

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October 2006

***Summary:**. On August 3, 2006, the Payment Cards Center of the Federal Reserve Bank of Philadelphia hosted a workshop led by Ronald Congemi, senior vice president of strategic industry relations for First Data Corporation, to examine developments on both the supply side and demand side that are influencing growth in the debit card market. On the supply side, Congemi addressed banks' increasing recognition of the importance of payments-related revenues in their institutional profit and loss statements, the effect of differences in interchange fees between PIN and signature debit, and the greater focus on cost structures for debit card issuers. On the demand side, he considered how changes in consumer payment preferences and innovations in the debit market were influencing consumer behavior and payment choice and, ultimately, competition among payment alternatives.*

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I. Introduction

On August 3, 2006, the Payment Cards Center of the Federal Reserve Bank of Philadelphia sponsored a workshop led by Ronald Congemi, senior vice president of strategic industry relations for First Data Corporation,[1] to examine the changing competitive landscape among payment applications at the point of sale (POS). Congemi is a recognized leader in the debit industry:[2] He founded the STAR® ATM and PIN debit network in 1984 and served as president and CEO until its acquisition in 2001 by Concord EFS. Subsequently, Concord EFS was acquired by First Data Corporation in 2004. In both these cases, Congemi continued to lead the ATM and PIN debit networks for the acquiring firm. Congemi's many years of experience in this industry naturally positioned his examination of POS payment choices from the perspective of a PIN-debit card payment processor. At the same time, this experience also made him uniquely qualified to discuss trends in consumer choice and POS payment competition as they have developed over time in the broader electronic payments industry.

In his discussion, Congemi described the ongoing migration in retail payments from paper to electronic applications, with a focus on the role debit cards are playing in consumer transactions generally, and at the POS. He examined supply and demand factors that are influencing this market's evolution and its potential for growth. Speaking to the supply-side effect in particular, Congemi addressed banks' increasing recognition of the importance of payments-related revenues in their institutional profit and loss statements, the effect of differences in

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[1] Per First Data Corporation's website, "First Data Corp. (NYSE: FDC) is a leading provider of electronic commerce and payment solutions for businesses worldwide. Serving 4.6 million merchant locations, 1,700 card issuers and their consumers, First Data powers the global economy by making it easy, fast and secure for people and businesses around the world to buy goods and services using virtually any form of payment. The company's portfolio of services and solutions includes merchant transaction processing services; credit, debit, private-label, gift, payroll and other prepaid card offerings; fraud protection and authentication solutions; electronic check acceptance services through TeleCheck; as well as Internet commerce and mobile solutions. The company's STAR Network offers PIN-secured debit acceptance at 1.9 million ATM and retail locations." For more information, visit www.firstdata.com.

[2] Congemi has served as chairman of the Electronic Funds Transfer Association, chairman of STAR System, Inc., and chairman of Primary Payment Systems. He is also the recipient of NACHA's Lifetime Achievement Award and a member of the Industry Advisory Council of the Federal Reserve Bank of Philadelphia's Payment Cards Center.

interchange fees between PIN and signature debit, and the greater focus on cost structures for debit card issuers and, particularly, how these change depending on the size of the portfolio. On the demand side, he considered how changes in consumer payment preferences and innovations in the debit market were influencing consumer behavior and payment choice and, ultimately, competition among payment alternatives.

Congemi framed his discussion by highlighting findings from two recent studies by STAR and First Data Corporation: the POS Debit Issuer Cost study and the 2005/2006 Consumer Payments Usage study. The POS Debit Issuer Cost study examined small, medium, and large financial institutions' program costs related to issuing signature and PIN debit cards. First Annapolis Consulting conducted this study on behalf of STAR/First Data.[3] The 2005/2006 Consumer Payments Usage study is STAR/First Data's 19th consumer survey on consumers' payment behavior, attitudes, and concerns, particularly regarding ATM and POS debit use. Applied Management & Planning Group conducted this most recent survey for STAR/First Data.[4] Together, these studies provided insights into several influences on the growing market for debit cards and on the mix of consumer payments at the POS.

II. Electronic Payments Increasingly Favored by Consumers

Consumers' increasing use of electronic payment applications instead of more traditional paper alternatives, Congemi stressed, is focusing industry attention both on those products that are primarily contributing to this growth – debit cards, credit cards, prepaid cards, and ACH – and on the drivers behind consumer payment preferences and related payment choices. In STAR/First Data's analysis, electronic payment transactions are expected to overtake cash and check transactions in 2008: Debit will increase to account for 20.6 percent, and similarly, credit card

[3] For more information on this study, see http://www.star.com/?go=press.ShowSingleRelease&id=117
[4] This survey was conducted with 13,745 consumers across 37 states. Random sampling techniques and statistical weighting were used to make the findings nationally representative. For more information about the survey and its methodology, see http://news.firstdata.com/media/ReleaseDetail.cfm?ReleaseID=205889.

transactions will increase to account for 18.5 percent of total consumer payment transactions. In comparison, checks and cash were projected to lose 4 percent and 7 percent in total market share, respectively.[5] Congemi also referenced several other organizations that have conducted studies with similar conclusions, including the Federal Reserve. For example, the Federal Reserve's recent study found that in 2003, electronic payment transactions exceeded check payments for the first time.[6] This study also showed that from 2000 to 2003, growth rates for debit and credit card transactions were 23.5 percent and 6.7 percent, respectively. Over the same period, check payments declined 4.3 percent.

Turning to POS consumer payments specifically, Congemi shared findings from the 2005/2006 Consumer Payments Usage study. This survey-based study of consumer preferences and self-reported payments usage estimated that, from 2004 to 2005, average monthly POS consumer debit card payments increased 18 percent, credit card payments decreased 10 percent, and check payments decreased 18 percent. Additionally, Congemi cited both the *Nilson Report* and the *ATM&Debit News* EFT Data Book findings that total purchase transactions made with debit cards will soon surpass, or have already surpassed, those made with credit cards.[7] In Congemi's analysis, the self-reported consumer usage data and the purchase transaction data cited above are further evidence that electronic payment applications and, above all, those that are debit-based are quickly becoming the payment method of choice for consumers at the POS.

On the basis of the data described in the preceding paragraphs, Congemi argued that debit card payments are positioned to be the primary beneficiary of the expected ongoing decline in the use of cash and checks, at least in the short term. Moreover, he pointed to STAR/First Data

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[5] STAR/First Data 2008 projections were based on data from the Nilson Report and analysis from First Annapolis Consulting.
[6] *The 2004 Federal Reserve Payment Study* can be found at www.frbservices.org/Retail/pdf/2004PaymentResearchReport.pdf.
[7] For more information, see the *Nilson Report*, September 2005, Volume 842, and the *ATM&Debit News* EFT Data Book 2007 edition.

research showing that consumers' growing preference for debit cards at the POS appears to be broad-based across both age and income demographics.

III. A Brief Introduction to the POS Debit Card Market

By way of introduction, Congemi described the growing POS debit card market as falling into two categories: signature and PIN-secured debit cards. Both types of cards draw on funds in a consumer's demand deposit account. In most cases, cardholders choose whether to authorize a point-of-sale debit card purchase with a signature or by entering a PIN,[8] and ultimately, this decision determines which type of payment network will process the transaction. Signature debit cards are branded by the Visa, MasterCard, or Discover payment network. Payment is authorized by a cardholder's signature, and then, the transaction is processed over these same networks. PIN debit cards are processed using regional ATM or electronic fund transfer (EFT) networks, such as the STAR/First Data network.[9]

While both formats have experienced significant growth over the last decade, Congemi noted that, in recent years, PIN debit growth has surpassed that of signature debit. He noted that from 2003 to 2005, PIN debit purchase transactions grew 23.7 percent per year compared with signature debit, which grew 15.1 percent per year.[10] Despite the recent growth of PIN debit, in 2005, signature debit still accounted for almost 5 billion more purchase transactions than PIN debit.[11]

Against the backdrop of increasing consumer adoption of electronic payments, the remainder of Congemi's discussion focused attention on the debit card market, with a particular emphasis on cards processed over PIN debit networks. While his discussion of debit applications

[8] Visa's No Signature Required program and MasterCard's Quick Payment Service program established rules to allow certain merchants to accept small-ticket purchases, generally below $25, without requiring a signature authorization by the cardholder.
[9] Examples of other large EFT networks include Discover/Pulse, Metavante/NYCE, and Visa/Interlink.
[10] Congemi's sources for this data were Visa, MasterCard, *ATM&Debit News*, and First Annapolis Consulting analysis.
[11] EFT Data Book, *ATM & Debit News*, 2007 Edition, p. 3.

touched on various aspects of the market, the rest of this paper will focus on those points addressing supply- and demand-side developments influencing debit card growth. The supply-side discussion addressed market factors affecting the value proposition for both card issuers and merchants. On the other hand, demand-side considerations centered on how and why consumers seem to be choosing one form of payment over another and, in particular, what aspects are driving the demand for debit cards. The two STAR/First Data studies noted earlier helped to shed light on both of these areas.

IV. Supply Side: Card Issuers and Retail Merchants

The discussion of supply-side developments addressed market influences affecting both issuers of debit cards and merchants accepting debit cards. Specifically, Congemi considered three areas that have either received increased attention or undergone some change over the past few years, including banks' increasing recognition of the importance of payments-related revenues in their institutional profit and loss statements, the effect on both banks and merchants of differences in interchange fees between PIN and signature debit, and the greater focus on cost structures for debit card issuers and, particularly, how these change depending on the size of the portfolio.

As an industry, financial services institutions, Congemi observed, are fundamentally changing the way they value their role providing payment capabilities to consumers. Traditionally, financial institutions have been organized around product areas such as retail banking, credit cards, mortgage lending, and so forth, with payments revenue rolled up into the profit and loss of each product line. More recently, Congemi pointed to an increasing recognition that payment revenue earned across product areas has become a substantial contributor to a bank's total revenue. In support, he shared estimates that payments-driven revenue accounted for

40 percent of total revenue – $173.6 billion of $482.2 billion – earned by U.S. banks in 2005.[12] Congemi asserted that, within the financial services industry, payments are beginning to be recognized as an important source of revenues. As a result, financial services firms are focusing more attention on the underlying economics of providing payments across their business lines, and in Congemi's view, such attention will lead to a more holistic approach to providing, delivering, and managing payments programs. He noted that this development will ultimately have implications for how such services are marketed and distributed to consumers and how consumer relationships are managed by banks.

In regard to interchange fees, Congemi noted that these fee-based revenues (and costs to merchants) are influencing debit cards' value proposition for card issuers and card-accepting merchants.[13] Historically, merchants have paid higher fees to accept signature, as opposed to PIN, debit cards. Among other things, Congemi stated that these fees have enabled card issuers to provide usage rewards and other incentives encouraging use by signature debit card holders. At the same time, because it has generally been much less expensive for merchants to accept PIN debit,[14] this lower cost has been an important driver behind increasing merchant acceptance and the corresponding installation of PIN-POS terminals. In support of his argument, Congemi noted that since 2000, the growth in PIN-POS acceptance has been substantial: The number of merchants accepting PIN debit at the POS has increased more than 80 percent, according to a recent study by First Annapolis Consulting. This same study estimated that in the first quarter of 2006, the number of PIN-POS debit locations had reached 64 percent of the total locations

[12] Numerous product areas contributed to payments revenue, including general-purpose credit cards, consumer demand deposit accounts, debit card issuing, small business demand deposit accounts, and cash management, as well as some others. Congemi used a variety of sources to calculate this estimate.

[13] The discount rate is the fee that merchants pay to accept payment cards. About three-fourths of this fee is paid to the card-issuing bank as an interchange fee.

[14] Congemi provided data showing that in 1999, nongrocery interchange fees to accept PIN debit were 60 percent to 80 percent less than those paid to accept signature debit; in 2005, PIN debit fees were about 30 percent less than those of signature debit. His data sources for these estimates were *ATM&Debit News* and First Annapolis Consulting analysis.

accepting signature debit.[15] Congemi highlighted the lower fees for merchants accepting PIN debit and the corresponding increase in merchant acceptance locations as important drivers behind consumers' growing use of PIN debit cards.

At the same time, Congemi observed that in recent years, the gap has been narrowing between the fees merchants pay to accept PIN and signature debit. Congemi also acknowledged that some industry commentators have even suggested that the per transaction interchange fee for signature and PIN debit transactions at the POS may converge as merchant acceptance of PIN debit cards continues to grow more in line with that of signature debit. To the extent that these fees do converge, Congemi suggested that the market incentives described earlier may, in fact, be reversed, with merchants less motivated to install PIN-POS terminals and card issuers showing less preference for signature debit. While Congemi acknowledged that there has been some movement toward the center, he expressed the view that complete convergence of fee structures between these two debit formats would not happen while there are still competitive networks – signature debit card and EFT PIN debit networks – providing these products to the market.

Finally, Congemi considered financial institutions' costs to issue and support signature and PIN debit programs for small, medium, and large card portfolios. STAR/First Data's POS Debit Issuer Cost study evaluated the fully allocated signature and PIN debit program costs by grouping them into three areas: back office,[16] processing,[17] and other costs.[18] Key findings included (1) PIN debit programs are less costly for issuers to support than signature debit programs; and (2) back-office costs drove variance in total program expenses for small verses large portfolios.

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[15] Charles Marc Abbey and Yuriy Kostenko, "The Acquiring Opportunity in PIN Debit," *Digital Transactions*, May 2006.

[16] Congemi defined back-office costs as those related to the following program support functions: risk/fraud management, chargeback/adjustment processing, settlement and accounting, collections, customer service, and card services.

[17] As described in the study, processing costs included costs related to card processing, gateway access/connectivity, and association/network fees.

[18] As described in the study, other costs included costs associated with net program losses, marketing, and other unallocated costs.

The study reported that, on average, total signature debit program costs for issuers – including back-office, processing, and other costs – were $0.22 per settled transaction with small institutions paying $0.302 and large institutions paying $0.154. In comparison, this cost for PIN debit programs was $0.116 per settled transaction, or approximately 47 percent less than signature debit. Smaller issuers of either type of debit card paid about twice as much as large institutions to support these programs, and a majority of their program costs stemmed from back-office expenses. On the other hand, according to STAR/First Data's analysis, back-office costs represented less than 25 percent of total program costs for large institutions.

Congemi noted that this cost variance was explored in more detail in the POS Debit Issuer Cost study to better understand the drivers behind the different experiences of large versus small institutions. In the case of both PIN and signature debit programs, back-office costs varied significantly, depending on the size of the institution. Large institutions' PIN and signature debit back-office costs were, respectively, 86 percent and 77 percent lower than small institutions'. On the other hand, while processing costs were significant, large institutions' experience was much more in line with that of smaller institutions': Their processing costs were only 12 percent lower for PIN debit programs and 26 percent lower for signature debit programs. Congemi suggested that one way for issuers with small portfolios to reduce back-office costs is to focus on strategies to increase purchase transactions and volume. In this way, smaller issuers could benefit further from scale efficiencies and improve cost structures.

In summary, as payments-driven revenue becomes an increasing focus for financial institutions, Congemi stressed that payments-driven costs must also garner more attention. For example, his discussion of the supply side revealed that while PIN debit cards may generate less revenue for card issuers than signature card programs, STAR/First Data's estimates suggest that PIN debit programs are, on average, roughly 47 percent less costly to support. Moreover, the potential of payments to significantly contribute to a financial institution's revenue may be tied to the size of its overall portfolio and its ability to cost-effectively manage the back-office support functions. Finally, Congemi highlighted increasing merchant acceptance of PIN debit at the POS as a strategy for lowering payment acceptance costs for merchants and encouraging them to promote consumer use of PIN debit. Issues associated with consumer choice between PIN and signature debit are explored in more detail in the following section discussing demand-side factors that influence market growth.

V. Demand Side: Consumer Preferences and Payment Innovations

In his discussion of demand-side factors, Congemi provided two examples where consumer payment preferences and cardholder demands for convenience and security were affecting the debit card market. In the first case, Congemi considered the reasons behind and the effect of declining use of ATMs. In the second example, the importance of consumer perceptions about security and fraud were discussed. In closing, Congemi described several innovations that he believed will create incremental consumer demand and further position debit as the "payment method of choice."

To illustrate the declining trend in ATM use, Congemi shared estimates showing that the annual growth rate in ATM transaction volume decreased from 7.5 percent in 1999 to 1.6 percent in 2005.[19] He attributed much of this decline to consumers' increasing avoidance of ATM convenience fees – which have grown almost 8 percent since 2004, to reach $1.95 on average in January 2006 – and to consumers' greater use of PIN debit's cash back option at the point of sale. For example, Congemi noted that there were 21.3 million POS cash back transactions processed on the STAR/First Data network in January 2006, an almost 25 percent increase over January 2004. In addition, the 2005/2006 Consumer Payments Usage study showed that 74 percent of debit POS users said that the ability to get cash back had reduced their trips to ATMs. Moreover, this study showed that PIN-POS debit was used to get cash back in 16 percent of all POS debit transactions in 2005. In Congemi's opinion, the higher costs associated with ATM withdrawals

[19] Congemi's data sources were *ATM&Debit News* and analysis by First Annapolis Consulting.

and the convenience of using PIN-POS cash back are acting together to depress ATM growth and increase PIN debit growth.

On the other hand, Congemi expressed real concern that, left unchecked, increased incidents of data breaches and publicized problems with identity theft could work to undermine consumer confidence in all electronic payments, including debit. To support this view, he shared findings from the 2005/2006 Consumer Payments Usage study that indicated that, for consumers, security and convenience were two of the most important factors considered when choosing a method of payment. Of particular relevance to debit, these factors were also cited by consumers as the top reasons for choosing to use a debit product over other payment alternatives. Moreover, the study found that concerns regarding security were a leading reason consumers gave for preferring PIN debit (45 percent) over signature debit (33 percent) at the POS. In general, industry watchers acknowledge that a PIN authentication is a more secure payment method than signature authentication because it marries something only the cardholder knows with something the cardholder has in his possession. The POS Issuer Cost study provided findings in line with both consumers' and analysts' security perceptions favoring PIN: Average fraud losses as a percentage of purchase volume were more than four times greater for signature as opposed to PIN debit programs. In Congemi's opinion, managing fraud risk is an area of critical importance for all industry stakeholders, and for debit card issuers and networks, it is critical to consumers' ongoing adoption of this payment method and to continued growth in the debit market.

Congemi next considered several recent innovations in card payments either aimed at adding convenience for cardholders or enhancing the security of the payment transaction, the two factors most cited by consumers when choosing a payment type. As illustrations, he referred to radio-frequency identification (also known as RFID or "contactless" payments), biometrics, and wireless as new technologies that can serve to make the purchasing process quicker, such as with RFID, or safer, such as with the use of biometrics. Congemi argued that by applying such front-end technologies to debit card transactions, more opportunities will emerge to build on existing consumer preferences for debit and increase consumer demand for these payment applications.

In addition to the application of front-end technologies to increase consumer demand for debit, Congemi also highlighted the prepaid card as ushering in a completely new model that will spur further transaction growth under the umbrella of debit payments. He noted that while, today, prepaid card transaction volumes remain small in comparison to traditional debit and credit cards, this payment category has shown significant and incremental growth over several years. Congemi estimated that in 2004, the total prepaid card market reached $80 billion, a growth of 39 percent over the 2003 purchase volume.[20] As this trend continues with existing and new prepaid card applications gaining momentum in the market,[21] debit-based products generally will continue to benefit.

VI. Conclusion

In his discussion, Congemi highlighted the increasing opportunities for debit card growth as a result of favorable supply- and demand-side developments in this market. He emphasized that together these developments are ultimately acting to encourage and support growing consumer use of debit applications. In particular, he pointed to changing economics for card issuers and card-accepting merchants as motivating debit card growth and to recent innovations in payment technologies and debit products as providing opportunities to increase consumer convenience and enhance payment security. At the same time, Congemi stressed that card issuers remain concerned about the potential harm to consumer confidence in electronic payments posed by recent data breaches and publicized incidents of identity theft.

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[20] Congemi's sources for the data were the *Nilson Report*, Atlantic ACM, and estimates by First Annapolis Consulting. Phone cards, network-branded prepaid cards, and retailer gift cards were included in the total purchase volume estimate of $80 billion.

[21] For example, payroll cards, flexible spending account (FSA) cards, health savings account (HSA) cards, incentive cards, and general-purpose cards.

In closing, Congemi emphasized a finding from the 2005/2006 Consumer Payments Usage study: Debit cardholders who used both debit formats – PIN and signature debit – made significantly more debit transactions than those who used only one of these methods. In fact, these cardholders accounted for 75 percent of all POS debit transactions. As a result, Congemi expressed the view that debit card issuers might be better served not by promoting one form of debit over another but rather by focusing their attention on providing effective PIN and signature debit strategies that address consumer demands for convenience and security in making payment choices.