DISCUSSION PAPER
PAYMENT CARDS CENTER

Credit Card Landscape Update

Susan Herbst-Murphy*

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Summary: *This recap of a January 2017 Payment Cards Center workshop conducted by Frank Martien of First Annapolis Consulting, Inc. (since acquired by and now part of Accenture) adds to the literature on conditions in the markets for consumer and commercial credit cards, and credit and debit cards use by small businesses, at a point some years after the 2007–2009 recession. Some insights are provided as to how the supply and demand sides for these products are operating after this major economic disruption and the enactment of two pieces of legislation affecting payment cards. The Credit Card Accountability Responsibility and Disclosure Act of 2009 (CARD Act) and the Durbin Amendment, which went into effect in 2010 and 2011, respectively, had implications for the market for payment cards used by consumers and small businesses. Commercial cards used by corporations and government were not affected by these regulations, but there have still been major developments in that product line. Readers will get a glimpse of some of the innovations occurring in commercial cards.*

Keywords: credit and debit cards, small business credit and payments, commercial cards, virtual cards, CARD Act, Durbin Amendment

JEL Classification Numbers: D18, G2, G28

*Payment Cards Center, Federal Reserve Bank of Philadelphia, Ten Independence Mall, Philadelphia, PA 19106. E-mail: Susan.Herbst-Murphy@phil.frb.org. The views expressed here are those of the author and do not necessarily reflect the views of the Federal Reserve Bank of Philadelphia or the Federal Reserve System. Nothing in the text should be construed as an endorsement of any organization or its products or services. No statements here should be treated as legal advice. This paper is available free of charge at www.philadelphiafed.org/consumer-finance-institute/payment-cards-center/publications.

I. Introduction

The credit card industry is nothing if not dynamic. Changes in the competitive and regulatory landscape have an impact. The economic environment affects both the supply of and demand for credit. New technologies, changes to funding or other costs, and new consumer entrants alter the status quo.

Because the credit card market is continually evolving and adapting, the Payment Cards Center (PCC) frequently reviews the state of the market. One way this is done is through our workshop series. To this end, the PCC invited Frank Martien, formerly a partner at First Annapolis Consulting, Inc. (now part of Accenture), to conduct a workshop on recent developments in the U.S. credit card market. Martien currently co-leads Accenture's commercial card and business-to-business (B2B) capabilities practice, which focuses on the issuance of consumer credit cards, small business payment cards, and commercial cards designed for corporate travel and entertainment (T&E), procurement, and fleet spending.[1] This summary of Martien's workshop is organized around those product groups as of the third quarter of 2016 and includes these highlights:

- After focusing on the low-risk segment of the market immediately post-recession, new account marketing for consumer credit cards has again become more inclusive of the near-prime and subprime strata.
- Consumer delinquencies and charge-offs have begun to rise but are well below the 10-year high.
- Small business spending on debit, credit, and charge cards increased 266 percent from 2006 to 2016. Volume on business debit more than quadrupled from 2006 to 2016, with growth rate percentages increasing to the mid-20s in 2011 before declining to single digits by 2016.

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[1] Subsequent to Martien's workshop at the PCC, Accenture's acquisition of First Annapolis was announced, http://firstannapolis.com/accenture-completes-acquisition-of-first-annapolis-enhancing-its-consulting-and-advisory-capabilities-in-payments. Martien remains with Accenture as a managing director.

- Credit cards are equal to bank loans as the leading source of financing for small businesses, with more than one-third of surveyed small businesses reporting using either or both of these two types of loans.
- The automated clearinghouse (ACH) has been the major displacer of checks in corporate and government payments; card volume growth continues, however. Virtual card accounts, for which no plastic is issued, have gained traction, particularly for high-dollar B2B transactions.

II. Consumer Credit Cards

Consumers' willingness to spend using their credit cards has continued a post-recession climb that began in 2012. Revolving credit card debt stood at $812 billion during third quarter 2016, an eight-year high, but lower than the 10-year peak of $837 billion in 2008.[2] Martien reported that the ratio of household debt service payments to disposable personal income is better than in the years 2007–2011, despite this rise in credit use.

In response to credit quality deterioration associated with the recession, card issuers controlled risk exposure by focusing their new account marketing efforts on prime and superprime consumers. After improvements occurred in both issuer portfolio quality and household balance sheets, lenders again began to extend more credit to borrowers with less-than-ideal credit profiles. In 2009, more than half of new general purpose credit card (GPCC) accounts went to each of the highest score tier (those with a FICO score of 760 or higher); just over one-third went to mid-tier applicants (FICO scores of 680–759), while only 14 percent of new GPCC accounts went to those with near-prime to subprime scores (FICO 679 or lower). In 2015, 50.5 million new GPCC accounts were originated, compared with about 30 million in both the recession year of 2009 and the following year, 2010. In 2015, 41percent of new accounts went to

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[2] The market sizing estimates presented by Martien were based on First Annapolis' analysis of figures from Federal Reserve revolving credit figures (net of noncard loans), SNL Securities managed card loans data, and the FDIC Quarterly Banking Profile. The dollar figures represent outstandings for both general purpose (GP) and private-label credit cards.

those with prime and superprime credit, 39 percent to those in the solid mid-range, and close to 20 percent to the near-prime and subprime segments.[3]

Hence, in 2015, nearly 70 percent more *new* GPCC credit card accounts were opened than in 2009, and a larger share of the 2015 accounts were extended to borrowers with credit scores in the mid-lower ranges. Over that time period, however, there was a realignment of risk in the aggregate credit card market. Using information for 2015 presented to the U.S. Senate Committee on Banking, Housing and Urban Affairs, First Annapolis organized total credit card outstandings to be consistent with the risk tiers used for new GPCC accounts.[4] While those in the mid-tier accounted for 28 percent to 29 percent of total credit card accounts throughout this timeframe, the proportion of accounts to the prime/superprime segment increased from 44 percent in 2009 to 52 percent in 2015; the near-prime/subprime component decreased from 27 percent to 19 percent. Some of this shift resulted, no doubt, from portfolio management tactics employed by issuers. Some, however, would have occurred from organic improvement in credit scores as the economic environment for borrowers improved. Some who were overextended paid down debt, some who had been delinquent became current, some who had experienced job loss had regained employment, and some with credit blemishes had them "age off" at the credit bureaus.

Issuers are also managing credit exposure through reduced credit lines. Average credit lines have declined in all risk tiers since the onset of the last recession in 2007. That year, the average credit line was more than $12,000 in the prime/super-prime segment; that average declined to under $11,000 in 2015.

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[3] Martien cited an April 2016 paper, "Out of Reach: Regressive Trends in Credit Card Access," as the source of this information. The paper can be downloaded from the Harvard Kennedy School at https://www.hks.harvard.edu/centers/mrcbg/publications/awp/awp54.

[4] First Annapolis used Argus Information & Advisory Services LLC and Goldman Sachs Global Investment Research, as depicted in the testimony of Greg Baer, president, The Clearing House Association, to the U.S. Senate Committee on Banking, Housing and Urban Affairs (June 23, 2016) as sources for the composition of the 2015 credit card market by FICO score, https://www.banking.senate.gov/public/_cache/files/53257b19-de9a-4734-8fde-beead88a2de6/440F70F96DF111ADCEF153AFE8650672.062316-baer-testimony.pdf. This review included new and existing GP and private-label credit cards.

Mid-tier average lines declined from about $10,000 to $7,000, while credit lines for the lowest score tier went from an average of about $5,000 to an average of $3,500.

Although these statistics can be taken as indications that credit card lenders are exercising prudent risk management, Martien offered in counterpoint that some have interpreted these data as signs of credit contraction created by regulations, particularly the Credit Card Accountability, Responsibility, and Disclosure (CARD) Act and provisions of the Dodd–Frank Wall Street Reform and Consumer Protection (Dodd–Frank) Act, which took effect during this period. It was in this context that Martien introduced the work of Marshall Lux and Robert Greene, the authors of the study cited in footnote 3 (and the source of the declining credit line averages in the preceding paragraph). The authors argue that factors including credit card regulatory restrictions enacted in the past decade "are likely constraining lower-score Americans' access to credit cards, revealing a tension between consumer financial protection and financial product access."[5]

Larry Santucci, PCC senior industry specialist, studied credit line data in 2005 (pre-CARD Act) and 2011 (post-CARD Act.) Without attributing cause, Santucci observed that "significantly less credit was extended … in 2011 than in 2005 [and] changes were most pronounced" in the lowest scoring quartile.[6]

Another PCC paper considered whether these same factors contributed to a spurt of growth activity in private-label credit cards. Compared with GPCCs, such as Amex, Discover, Mastercard, and Visa, private-label cards issued primarily by or on behalf of retail stores and gas companies (with use limited to purchases made from the issuing merchant) carry higher interest rates and have more limited utility.[7]

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[5] The causal factors identified by the authors and their methodology for arriving at those conclusions are discussed in Section IVB of their paper, cited in Footnote 3, https://www.hks.harvard.edu/centers/mrcbg/publications/awp/awp54. Note that others have offered different conclusions about regulatory effects on consumers (e.g., papers cited at footnotes 12 and 14 later in this document.) Martien included some of the Marshall and Lux findings during his workshop in deference to the concept that low delinquencies and charge-offs may come at a cost to some consumers.

[6] Larry Santucci, "A Tale of Two Vintages: Credit Limit Management Before and After the CARD Act and Great Recession," Federal Reserve Bank of Philadelphia, February 2015.

[7] Statistics for GPCCs cobranded with a merchant are included in GPCC data when credit card statistics are broken out into separate GPCC and private-label categories. Unlike private-label cards, cobranded cards can be used at any

Their use had been in decades-long decline as a share of consumer purchase dollars. In the years shortly after the recession and the implementation of the CARD Act, however, some reversal of that trend occurred. For example, a 10 percent increase in new private-label account openings occurred from January through May 2012 compared with the same five-month period in 2011.[8] In dollar volume of loans outstanding, Equifax reported a 14 percent increase in private-label lending to subprime borrowers between 2010 and 2012.[9]

For 2015, the year that Lux and Greene reported that 50 million new GPCC accounts were opened, private-label cards in circulation experienced a net increase of 15.4 million. In 2016, private-label cards increased by a net 21.4 million.[10] TransUnion reports that "the number of new accounts often doubles for certain retailers in the months of December." In 2015, TransUnion saw this seasonal boost more prominently in subprime and near-prime risk categories, a pattern also observed in 2013 and 2014.[11] The Consumer Financial Protection Bureau (CFPB) has also observed this pattern of new private-label account opening, noting that "consumers with core subprime scores have increased their private-label cardholdings over recent years." The CFPB demonstrated that subprime categories accounted for an increasing share of new private-label account volume from 2012 through 2014.[12]

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merchant accepting the brand of the network (Amex, Discover, Mastercard, and Visa) that cobrands with the retailer or service provider.

[8] Susan Herbst-Murphy, "Trends and Preferences in Consumer Payments: Updates from the Visa Payment Panel Study," Federal Reserve Bank of Philadelphia, July 2015. The discussion of private-label credit cards is in Section IIIB.

[9] David Heun, "Credit Card Accounts Grow as Consumers Shift Borrowing Habits," *PaymentsSource*, August 29, 2012.

[10] Increases based on annual reports of store cards in circulation, *The Nilson Report*, Issues 1062, April 2015; 1087, May 2016; and 1112, June 2017. Net increases are the difference in total numbers of cards in circulation year over year, including new cards opened net of cards closed during the year. Note that the number of cards in circulation is not equal to open accounts.

[11] "Retailers, from Jewelers to Discount Stores, See 2x Spike in New Private Label Credit Cards during Holiday Season," TransUnion Newsroom release, November 15, 2016, http://newsroom.transunion.com/retailers-from-jewelers-to-discount-stores-see-2x-spike-in-new-private-label-credit-cards-during-holiday-season/.

[12] Consumer Financial Protection Bureau, "Consumer Credit Card Market Report," December 2015, http://files.consumerfinance.gov/f/201512_cfpb_report-the-consumer-credit-card-market.pdf.

Changes in multiyear trends in private-label credit cards, coupled with the new account opening activity within higher risk tiers, might indicate that private-label cards have become a substitute form of revolving credit for those who may have been disenfranchised from the GPCC market, possibly by economic conditions or regulatory action. Santucci notes that "issuer responses to both factors [the CARD Act and the recession] are observationally equivalent," during the years immediately following both events. Payday lenders also saw a rise in patronage during this time period.[13]

But the recession ended, although regulations enacted in the time period roughly contemporaneous to the recession remain in force. This emphasizes the importance of ongoing research that monitors the extent to which certain trends persist as we become further removed in time from the 2007–2009 recession and its effects.[14]

From their research, which included data through 2015, Lux and Greene concluded that supply-side constraints, some of which are driven by regulation, "are likely major factors behind credit cards increasingly being out of reach for many lower-score and lower-income households." Recently published store credit card growth statistics through 2015, concurrent with the last year included in Lux and Greene's analysis, found that the growth rate for store card outstandings had, for the fourth straight year, outpaced that for GPCCs." [15] If store cards have become substitutes for GPCCs, then credit cards in some

[13] The Federal Reserve's Survey of Consumer Finances began capturing the use of payday loans in 2007, the year the last recession began and pre-CARD Act or Dodd–Frank Act. That year, 2.4 percent of families (the survey's unit of participation) had taken a payday loan. That percentage has been higher in subsequent survey years (3.9 in 2010, 4.2 in 2013, and 3.4 in 2016.) The triennial interval for the survey makes it a less sensitive gauge of market reaction to the timing of specific events. Additional insight into recent changes in the payday lending market comes from author Lisa Servon. In her book "The Unbanking of America: How the New Middle Class Survives" (Houghton Mifflin Harcourt, 2017), Servon reports that one payday lender's analysis of its client data found a "substantial shift in the types of consumers" requesting payday loans. This group, which the lender refers to as the "new nonprime," increased more than 500 percent from February 2010 to August 2011.

[14] As previously noted, other researchers have reached differing conclusions pertaining to the effects of recent regulation. (See, for example, "Regulating Consumer Financial Products: Evidence from Credit Cards," Agarwal, et al., *The Quarterly Journal of Economics,* 130(1), February 2015, https://academic.oup.com/qje/article/130/1/111/2338025). The December 2015 CFPB report acknowledges that where regulations did limit consumer access to credit, "at least some of these impacts on credit availability appear to have been specifically intended by Congress." The discussion here is not one about the merits of regulation, but one that focuses very specifically on possible substitution in the consumer credit card market.

[15] "Store Cards in the U.S. 2015," *The Nilson Report,* Issue 1087, May 2016.

form may not be fully out of reach for the households Lux and Greene identify. But those households may be relegated to cards that incur higher costs to the user and restrict use to one retailer only. The latter point may correlate with the observed increases in payday lending use: Consumers with restricted access to revolving credit may not find all their needs met by one (or even several) retailers.[16]

While access to credit within a segment of consumers may have been rendered more limited, providers of both GPCC and private-label credit cards have adapted to, even benefited from, the new regulatory environment. From First Annapolis' analysis of the call reports of 13 credit card banks (which includes a mix of major GPCC issuers, subprime lenders, and private-label issuers), Martien reported that net charge-off rates were rising in 2016. Some deterioration in credit quality has also been reported by other sources.[17] But Fitch Ratings observes that the reduction in subprime exposure associated with the 2009 CARD Act may provide a cushion against credit losses, keeping them "below historical averages for most issuers."[18] GPCC issuers appeared to be benefiting from this lowered exposure even more than private-label issuers. The May 2017 article based on Fitch's special report, "U.S. Credit Cards — Asset Quality Review 1Q17," disclosed that Fitch had found credit deterioration "more pronounced in the retail cards segment (related to) higher composition of subprime borrowers using retail card products."

Moody's Analytics built an econometric model designed to identify the factors contributing to this rise in retail card delinquencies. Reviewing data from January 2014 through May 2017, and looking at the length of time that accounts were on book, credit score mix, and economic conditions, Moody's concluded that credit score composition had the greatest impact on delinquency. Had credit quality

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[16] The cash advance utility of a GPCC also needs to be considered in this context. When emergency cash is needed for payments and purchases at noncard-accepting locations, an advance can be drawn off the line of credit with a GPCC. Cash advances generally are not available on private-label credit cards.

[17] For example, Lisa Abramowicz writes that lenders have "ratcheted up loan-loss provisions and reported increasing delinquencies." See "The Trillion-Dollar Card Question" Bloomberg, April 12, 2017, https://www.bloomberg.com/gadfly/articles/2017-04-12/rising-credit-card-charge-offs-pose-1-trillion-question. A January 10, 2017, press release by the American Bankers Association reported that credit card delinquencies had risen from 2.48 percent to 2.74 percent, https://www.aba.com/Press/Pages/011017DelinquencyBulletin.aspx.

[18] "Fitch: U.S. Credit Card Losses Likely to Continue Upward Trend," Reuters.com, May 25, 2017: www.reuters.com/article/fitch-us-credit-card-losses-likely-to-co-idUSFit998673.

composition remained unchanged during that time, Moody's model determined that "the 60-day delinquency rate would be an estimated 23 bps below the current level." Vintage played a smaller role, with delinquency rates estimated to be about 9 bps below current level if months-on-book had remained constant. Economic factors have been favorable, however; if 2014 conditions persisted throughout the time period, Moody's estimated that 60-day private-label delinquencies would have been 5 bps above their May 2017 level.[19]

Despite the "more pronounced" credit deterioration in the private-label category noted by Fitch, retail stores continued to see their affiliated credit card programs make a greater contribution to profit. Between 2013 and 2016, the Macy's card portfolio's contribution to total company profits increased from 26 percent to 39 percent. Kohl's experienced an increase from 23 percent to 35 percent. Target's increase was more moderate, from 11 percent in 2013 to 13 percent in 2016.[20] A CreditCards.com report stated that two of the largest store card lenders "reaped the most interest and fees from their cardholders among 12 major card issuers," outpacing powerhouse GPCC issuers including American Express, Chase, USAA, and Wells Fargo.[21] Although timely repayment rates for store cards may be worse than in the GPCC category, the higher delinquency costs and credit losses are buffered by higher yields from interest and fees.[22] The sponsoring retailers also profit from inventory markups on the sales made to these

[19] U.S. Economic and Credit Trends Outlook from Equifax, 4Q2017, a webinar presented by Amy Crews Cutts, senior vice president and chief economist at Equifax, and Cristian deRitis, senior director at Moody's Analytics, November 16, 2017.

[20] Michael Corkery and Jessica Silver-Greenberg, "Store-Branded Credit Cards Buoy Struggling Retailers, but Mask Their Pain," *New York Times*, May 12, 2017, p. A16. A nytimes.com version of this article, under the title, "Profits from Store-Branded Credit Cards Hide Depth of Retailers' Troubles" can be found at https://www.nytimes.com/2017/05/11/business/dealbook/retailer-credit-cards-macys-losses.html?_r=3.

[21] Fred O. Williams, "Banks that Make the Most Money, and the Least, on Credit Card Loans," December 2, 2014, www.creditcards.com/credit-card-news/bank-yields-loans-1276.php.

[22] A 2015 survey of credit card interest rates undertaken by creditcards.com found an APR of 23.43 percent on retail credit cards, an increase over the 2014 average of 23.3 percent. It was also higher than the national average of 15 percent for all credit cards in 2015. See "Retail Card Survey 2015: Average APRs Inch Up," by Sienna Kossman, credit cards.com, October 14, 2015, www.creditcards.com/credit-card-news/retail-card-survey-2015.php.

cardholders. And for as long as growth in new accounts increases outstanding balances, the resulting higher denominator can keep the loss and delinquency rate quotients within acceptable bounds.

III. Cards Used by Small Businesses

A. Meeting Small Business Credit Needs

Smaller enterprises continue to employ cards as both a form of payment and an important source of financing. In mid-2016, credit cards and bank loans were the sources of financing most used by small businesses. Martien presented data from the National Small Business Association (NSBA) that showed 71 percent of small businesses had used some type of financing in the 12 months before July 2016. Bank loans and credit cards were each used by about one-third of small businesses providing input to the NSBA. While this proportion was well below 2008 figures, when about half had financed with credit cards and nearly that many had used bank loans, no other form of credit was used by even 20 percent of respondents. The 31 percent who had accessed bank loans was composed of 14 percent who obtained their loans from a large bank, 14 percent who used community banks, and 3 percent who had credit union loans.

A lending category, "Online/Non-bank/Crowd-funded" that was first included in the NSBA survey in 2013 was used by a low single-digit percentage of small businesses in the 12 months before July 2016. The growth in the category from 2013 to 2016 was sufficient to achieve usage on par with Small Business Association (SBA) loans, venture/angel investment, and state or regional loan and incentive programs. Each of these categories was used by 3 percent of respondents in 2016.

Growth in usage within any of these loan categories has been rare in the years since the onset of the last recession. In addition to the percentage decline reported for bank loans and credit cards, small enterprises using vendor credit declined from over one-fourth in 2008 to less than 15 percent in 2016. Use of leasing declined, although less dramatically. Private loans, used by about 15 percent in 2008, have hovered plus or minus that point since that time, and were slightly up in 2016.

The recession was a volatile period for small business credit card issuers. Charge-off rates rose dramatically. First Annapolis' analysis of FDIC call report data from that period found charge-off rates from 10 percent to more than 20 percent for six major issuers of small business credit cards. By the third quarter of 2016, charge-off rates for all were in the low single-digits, near to or below their 2006 rates. In response to this volatility, issuers' offer rates on direct-mail solicitations rose an average of about 1.5 percentage points from 2009 to 2010. Since then, rates on direct mail offers have been fairly stable. One cannot impute from this the rates that might have been available through branch-sourced applications or other acquisition channels, nor does it reflect the rate effective on any account already in an issuer's portfolio. But stability in direct mail offer rates and in charge-off rates are positive signals for borrowers and for the industry.

B. Meeting Small Businesses' Payment Needs

Within the purchase component of small business card usage, volatility was much less in evidence. With the exception of 2008–2009, aggregate spending on credit, debit, and charge cards used by small businesses generated year-over-year increases in every year from 2006 to 2016. During that time, total spending increased 2.7 times, growing from $283 billion in 2006 to $752 billion in 2016.[23] Debit card dollar volume increased 4.5-fold; charge card volume increased 2.3 times, and credit card volume was up 2.2 times over those 10 years. But growth in the respective product categories did not occur evenly during that period. Small business debit's highest growth rates were front loaded in the first five-year period, while credit and charge cards experienced greater growth in the second five years.

To some degree, the shifts in growth patterns for these products likely reflect the varying economic conditions during those 10 years. During the 2007–2009 recession, spending on small business credit and charge cards was subdued; in fact, both product types experienced real-dollar declines in spending between 2008 and 2009. Similar recession-related effects were observed in *consumer* spending on debit and credit

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[23] These estimates were produced by First Annapolis from data in American Express, Mastercard, and Visa annual reports, Securities and Exchange filings, investor presentations, and *The Nilson Report.*

cards: Households curtailed their spending on credit cards during the recession, while growth in debit card spending continued. Then, as the economy improved, credit card purchases by both consumers and small businesses began to pick up again, but growth rates of debit card volume began to slow.

In addition to changes in the economy, another factor, Regulation II (governing debit card interchange fees and routing), may have had an effect on comparative rates of growth for debit and credit cards. For consumer debit usage, there are other influences that could have contributed to a slowdown in debit card growth.[24] But for small business debit, there are indications that suggest this regulation may have been more consequential in tapering the debit growth curve.

1. Was Durbin a Watershed Moment for Small Business Debit?

Regulation II is an outcome of the Durbin Amendment to 2010's Dodd–Frank Act. The amendment authorized the Federal Reserve Board to develop regulations to limit the compensation paid by acquirers (the banks that enter merchants' debit card receipts into the clearing and settlement system) to issuing banks subject to the regulation, for facilitating the payment to the merchant. Banks with less than $10 billion in assets were exempt from the price caps established by the regulation, but debit card issuing banks with assets of $10 billion or more were subject to substantial decreases in debit card interchange reimbursements when the regulation went into effect in late 2011.[25] The Board of Governors of the Federal Reserve System analyzed 2011 data provided by issuers, acquirers, and networks. Comparing 2011 interchange revenue for covered banks for the first nine months of that year (pre-Durbin) with the final three months (post-Durbin), the Board found that interchange revenue per signature transaction for covered issuers declined 29 percent, from 59 cents pre-Durbin to 24 cents post. For PIN-authorized transactions, the decline was 32 percent, from 34 cents pre-Durbin to 23 cents post.[26]

[24] See Section IIID of the document cited in footnote 8.

[25] See Section 1073 of Public Law 111-203. The text of the final rule can be found at §235 Code of Federal Regulations, Title 12.

[26] "2011 Interchange Fee Revenue, Covered Issuer Costs, and Covered Issuer and Merchant Fraud Losses Related to Debit Card Transactions," The Board of Governors of the Federal Reserve System, March 5, 2013.

The interchange experience captured by the Board is directionally similar to that reported in the 2012 Debit Issuer Study, the product of a survey undertaken annually by Oliver Wyman. The study reported that covered banks experienced a 55 percent decline in revenue per consumer signature debit transaction, and a 28 percent decline per consumer PIN transaction.[27] The Oliver Wyman survey separately captures data for consumer and small business debit programs offered by issuers. The results revealed that covered issuers' portfolios of *small business debit cards* took an even greater hit to revenue than did consumer debit portfolios. The study reported that business debit signature interchange plummeted 87 percent, a decline the study characterized as "so severe that business debit is now unprofitable for some issuers." The more acute effects on business debit are accounted for by three factors:

- Prior to the Durbin Amendment, debit card reimbursements for transactions between B2B trading partners yielded a higher interchange rate than did those done by consumers.
- The average ticket of business debit transactions was and is higher than the average consumer purchase. When cards issuers received reimbursement *ad valorem*, the higher B2B ticket produced a higher reimbursement from the acquiring bank to the issuing bank.
- The ratio of signature:PIN transactions is different between consumers and small businesses. While consumers of covered issuers in 2012 were authenticating one-third of their debit transactions with a PIN, according to the Oliver Wyman study, businesses were doing less than 23 percent that way. Since signature debit transactions took a greater revenue reduction (35 cents per transaction, according to the Federal Reserve analysis) than PIN transactions (11 cents per transaction) as a result of Durbin, effective income declines were higher in small business portfolios because of their higher proportion of signature transactions. And

[27] Oliver Wyman, 2012 Debit Issuer Study, commissioned by PULSE, August 2012. The 2012 study was based on issuer-reported interchange income in 2011, the year the Durbin Amendment's Regulation II went into effect. The pre-Durbin rates are based on respondent reporting for January–September 2011, and the post-Durbin rates are for the period October–December 2011.

issuers pay higher processing costs for signature transactions, a further way in which business debit portfolios were more adversely affected.[28]

But business debit issuers also had somewhat more ability to adopt defensive maneuvers if they no longer realized sufficient return to support the product. Compared with their counterparts serving consumers, stepping back from active marketing and new account origination was a potentially viable option.

In the consumer space, debit cards have become an expectation, especially among young adults who comprise the majority of the new entrants to the financial services market. Today, when consumers open a transaction account, most want a debit card, too. And with more than 13,000 banks and credit unions operating nearly 100,000 branch locations in the U.S., intense competition has, for now, left retail financial institutions (FIs) with little opportunity to limit or discontinue what has become a popular consumer product.

Marketing dynamics for the small business debit product, however, are somewhat different. First, the product is much less widely offered than its consumer counterpart, and even among those FIs that have it available, it is a newer entrant to the product lineup. An earlier Oliver Wyman study reported that adoption had been growing at impressive rates, indicating that issuers had raised awareness for their small business debit cards. The 2011 Debit Issuer Study found that for 56 percent of small business checking accounts opened in 2010, a debit card was also opened. This was particularly significant given that the debit card penetration for existing small business demand deposit accounts (DDAs) was only 46 percent.[29] Small business debit was gaining traction but hadn't reached the critical mass of the consumer side. Nearly three-quarters of consumer DDAs had an adjunct debit card in 2010. Consumer debit also had higher purchase-active rates (the proportion of cards used to make purchases at point-of-sale), and the active consumer card yielded 37 more transactions annually than the average small business debit card.

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[28] The Board of Governors study cited in footnote 25 reported that issuers' authorization, clearing, and settlement costs for a signature transaction were 2.4 cents higher (on average, in 2011) than for PIN transactions.

[29] Oliver Wyman, 2011 Debit Issuer Study, commissioned by PULSE (April 2011.)

By the time Regulation II went into effect in late 2011, small business debit may not have reached the tipping point that would have made it impossible for issuers to retreat from marketing efforts. A further comparison of consumer-to-small business debit metrics suggests that this may, in fact, have been the supply-side reaction to the new legislation.

2. Different Effects on Mature versus Developing Markets

Consumer debit card dollar volume growth rates have also declined since the Durbin enactment. Some have questioned whether a cause-and-effect relationship exists. Looking at growth rates over the longer term, while not refuting a causal relationship, does suggest other contributors to the slower growth for consumer debit.

After a dozen or more years of growing at a tortoise pace, consumer debit card use took off in the 1990s in what has often been referred to as a "hockey stick" pattern. The sharp uptick reflected annual growth rates over 20 percent through the middle of the last decade, followed by rates in the high teens for several years thereafter. In 2009, the growth rate dropped sharply to about 7.5 percent (likely related to the recession.) but rebounded to 14 percent in 2010 and just under 12 percent in 2011. Since then, growth has hovered at 6.7 percent to 7.9 percent annually through 2015.[30]

The single-digit growth rates since 2011 could lend credence to speculation that the Durbin Amendment influenced this decline. But the dollar volume growth rate, while rallying again to double digits for a couple of years post-recession, had been decreasing at a small but steady pace, even as it sustained double-digit rates for over a decade and a half. This incremental wind down occurred as the market reached objective indicators of maturity even before it experienced regulatory effects. Once only available at a relative handful of depository institutions, the number of banks offering debit cards skyrocketed as consumers began to grasp the concept of accessing funds on deposit using a card rather

[30] Calculations were made by the author from consumer payment system data reported annually in *The Nilson Report*. These yearly measures of growth are consistent with the growth trends observed in the triennial Federal Reserve Payment Study, https://www.federalreserve.gov/paymentsystems/fr-payments-study.htm.

than a check. The number of consumer-facing card-accepting merchants, which exploded from the mid-1990s to the middle of the following decade, had reached near saturation. Over roughly the same period, consumers had shifted more than 23 share points of their spending dollars, and more than 33 share points of transactions, to debit cards. The share shift came largely at the expense of checks, which declined from more than a 50 percent share of consumer dollar volume in 1996 to under 10 percent in 2015.[31] Much of the 2015 check share remains with merchants and billers who are not card accepting.[32]

The small business debit market has not experienced the same conditions. Even during the recession, rates of growth dipped a bit but were still in double digits: 16 percent from 2007 to 2008 and 12.7 percent from 2008 to 2009. As the economy emerged from the recession, small business debit saw its growth rates surge to the mid-20s through 2011, as more FIs began offering and promoting it and as small businesses exhibited the same patterns of awareness, adoption, and activation that had accompanied the explosion of consumer debit usage. Growth appeared to be on same upward trajectory that had occurred in the consumer space but was interrupted before bumping up against similar indications of market maturity and saturation.

Momentum was continuing to build going into the beginning of this decade. One indication of that was the 12 percentage point one-year jump in the proportion of FIs offering small business debit card programs. In 2009, 70 percent supported the product; by 2010, 82 percent had developed the capability. But in the next two years, that proportion rose only another four points. By 2015, the debit card penetration rate of small business checking accounts stood even with its 2010 rate of 46 percent, and the sales to newly opened small business checking accounts was down 2 points in 2015 (to 54 percent) compared with the 2010 experience.[33]

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[31] "Consumer Payment Systems — U.S.," *The Nilson Report*, Issue 656, November 1997, and "U.S. Consumer Payment Systems," *The Nilson Report*, Issue 1100, December 2016.

[32] For more detail on related dynamics in the consumer debit card market, see Section III.D of the paper cited in footnote 8.

[33] Statistics included in this paragraph come from the 2011, 2013, and 2016 Debit Issuer Studies conducted by Oliver Wyman.

This truncation of growth occurred despite a smaller shift from check writing having occurred relative to consumer payment trends. In 2015, debit cards were used for 58 percent of consumer noncash payments, and checks accounted for 8 percent. For small business payments, debit accounted for only 9 percent, with checks used for 33 percent.[34] Check use by small business has declined over time, with the ACH benefiting from migration to electronic payments by small firms. The nature of purchases made by these firms from their trading partners can make ACH payment a viable check substitute (e.g., when goods or services are delivered by the seller along with an invoice, with payment made subsequent to invoice approval by the buyer's accounts payable function). These kinds of transactions may explain the differences between consumers and small businesses in payment-form migration. But card acceptance among vendors to small business is not as prevalent as in the consumer sphere, a status that could 1) contribute to sustained check use and 2) be an indication of less saturation/maturity in the small business debit market. There would be no expectation that small business debit market development would precisely mirror that of its consumer counterpart; the growth rate decline in small business debit that is observed after regulatory intervention may be purely coincidental. Still, a change in growth trajectory in what appears to be an unsaturated market, synchronous with legislation directly affecting that market, triggers curiosity.

Durbin regulations took effect near the middle of the 10 years of usage data Martien shared with the workshop audience. During the first five years from 2006 to 2011, small business debit dollar volume increased 2.4 times. Regulation II went into effect at the end of 2011. For the five-year period following (2011–2016), small business debit volume increased only 1.8 times. Growth rates will eventually decline, as an arithmetic function, as the base increases. But small business *credit,* which began and ended the series with higher volumes than debit, had higher growth rates than debit in the second five years, despite

[34] "Exploring Trends in Noncash Payments in the United States," a presentation by Mary Kepler, Federal Reserve Bank of Atlanta, and Geoff Gerdes, the Board of Governors of the Federal Reserve System, April 24, 2017. This presentation at the annual NACHA payments conference provided key findings from the 2016 Federal Reserve Payments Study.

growing at only half the rate during the first five years. For the credit product, marketing retrenchment occurred during those first five years, when recession-induced loss rates yielded negative profits for some issuers. The lackluster performance of small business debit during the latter five years (relative to the previous five) may have similarly resulted from supply side brakes on marketing as that product's profitability declined because of regulatory factors.

IV. Cards Used by Corporations and Large Businesses

As with their smaller counterparts, large businesses and corporations issue a lot of checks. This is especially true for midmarket companies. Martien reported that 67 percent of 2015 transactions done by companies with $20 million to $500 million in annual revenues were facilitated by check. The check share for large corporations (more than $500 million in annual revenues) was 46 percent that year. ACH share was 18 percent in the midmarket and 36 percent among large corporates. Wire transfer, a payment method used infrequently by consumers, accounted for 7 percent of midmarket transactions and 11 percent of corporate expenditure transactions. Payments made over card networks accounted for single-digit shares in both groups.[35] Although proportionately small as a share of total commercial expenditures, the amount of card-based spending done by these companies is large and growing. It is also an area that provides unique opportunities for innovation, improvement, and efficiencies.

To provide a sense of scale, Martien noted that the commercial card programs of some large and sophisticated corporations can generate hundreds of millions in annual spending, larger than the total assets of some community banks. By 2018, according to First Annapolis' projections, the card programs of organizations with more than $10 million in annual revenues are on track to have added $194 billion in annual spending compared with 2013 totals. And an increasing share of that — nearly 30 percent

[35] Martien cited "2015 Treasury Management Monitor™ and Service Quality," Phoenix-Hecht, November 2015, and comparisons with previous such Phoenix-Hecht publications.

projected for 2018 compared with less than 14 percent in 2013 — will occur with virtual cards. Virtual cards provide one example of the kind of innovation that is occurring in this sector.

A. What Is a Virtual Card?

Virtual cards (or accounts), also known as electronic accounts payable (EAP), are "non-plastic purchasing card accounts used to pay for goods and services after an invoice has been received for those goods or services."[36] This is a departure from most card system payments, which are initiated at the time of *purchase,* rather than *upon receipt of invoice.* Another commonly found distinction is that a *unique, one-time use number* is generated to facilitate payment for a specific invoice. This one-time authorization is often for the exact amount of the invoiced transaction that occurred between the two trading partners. This single-use structure greatly reduces opportunities for fraud to both parties, compared with static account numbers tied to an open credit line, which can be compromised and used for unlawful transactions or to create counterfeit plastic.

In addition to being less subject to account compromise, virtual cards improve float to both parties: The buyer retains use of funds until receiving a statement and making payment to the issuer, and the seller gets settlement electronically, an advantage over receipt of payment by check. The unique payment number also creates a unique match to the invoice number, establishing an electronic record that can feed into electronic reconciliation systems on both sides.

Using RPMG Research data, Martien showed that the companies using virtual card technology used it most frequently for payments in the $2,500 to $10,000 range.[37] At this level, 21 percent of payments were made using virtual cards/EAP. This proportion drops to 8 percent for payments amounting to $100,000 or more. Although the proportion constitutes a minority of total payments, the size of each payment contributes a meaningful total to the dollars processed through the card payment system, with an

[36] From "EAP Card 2012," a presentation by Richard Palmer, RPMG Research Corporation, at the Global Commercial Cards & Payments Summit, New York, NY, March 2013.

[37] 2015 Electronic Accounts Payable Benchmark Survey Results, RPMG Research Corp., July 2015.

additional estimated potential more than $800 billion in U.S. and Canadian commercial spending that could migrate to virtual cards.[38]

Increased awareness of the capabilities and benefits of virtual cards is one driver of "disruption and competition in U.S. commercial cards," which Martien discussed at the PCC workshop. The next section discusses other forces having an impact in this space.

B. Commercial Cards at an Inflection Point

In their early incarnation, commercial cards were generally seen as a payment form that offered much of the same efficiencies and value proposition that had made cards a successful electronic payments alternative to cash and checks in the consumer payments space. In the complex world of corporate payments, however, cards, and the platforms they operate on and interface with, have increasingly incorporated business process automation as a selling point. A recent survey of finance and treasury professionals conducted by Strategic Treasurer found that electronic card or ACH payments were ranked the fifth most-important component of accounts payable automation. Automation of invoice delivery and capture, invoice approval, payment approval, and reconciliation were all ranked higher.[39]

Another driver, noted Martien, is the proliferation of APIs, particularly among very large, sophisticated corporate payers, which allow these payers to connect with other internal and external systems. These APIs allow greater automation without requiring significant systems integration. And perhaps as an example of "success breeding success," growth in commercial card adoption has, itself, contributed to enhanced C-level awareness and further card use and adoption. Research by Strategic Treasurer found that 26 percent of corporations with card programs planned to spend "more" or "significantly more" on card programs in 2017 compared with 2016, and surveyed companies stated a particular likelihood to add virtual or accounts payable card programs. With more card program usage,

[38] These estimates are also derived from RPMG.

[39] B2B Payments & WCM Strategies 2017 Survey Report, written and produced by Strategic Treasurer, Consultants in Treasury. Research sponsored by Bank of America Merrill Lynch and Bottomline Technologies, 2017.

more data are available on which to base decisions on how these programs can benefit the payables process.

Data are increasingly useful to demonstrating the value proposition for merchants, too. Martien asserted that there has been "10 times more research on benefits to buyers than to sellers," but quantifying the benefits to sellers is becoming more common. One example of this, according to Martien, is the loss of invoiceable revenue related to merchant problems in receiving payment from customers. Using third-party research,[40] Martien reported that 27 percent of suppliers experience a loss of over 2 percent of their invoiceable revenues owing to these types of issues. This percentage, noted Martien, is comparable with the typical cost of card acceptance. Thus, more than one-quarter of suppliers could pay acceptance costs out of loss avoidance if the foregone revenues can be captured by accepting cards for payment. Among the eight reasons provided for payment delays by at least one-quarter or more of these firms, five could be alleviated by card payments, according to Martien. Foremost among these was the most frequently reported reason, insufficient funds in the account of the customer, experienced by 38 percent of suppliers.

And "problem payers" seem to exist in the client base of most B2B vendors. In response to an early 2017 survey conducted by ReceivableSavvy, a research and content provider to finance and accounting professionals, only 8 percent of surveyed firms reported that they "don't have customers that consistently pay late."[41] Among the majority of these firms that experience late payments, the most frequently used collection effort, cited by 70 percent, is calling the client. More than one-third (37 percent) decline additional orders from late-paying customers, and 30 percent send delinquent accounts to a third-party collection service. All of these ameliorative efforts by vendors either add to their costs or reduce their revenues. When card payments are received, collection efforts are not needed, and the related impact to the bottom line becomes a consideration in the card acceptance value proposition.

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[40] Martien's source is "Automating AP/AR Financial Processes," AIIM (Association for Information and Image Management)/ASG Software Solutions, 2014.

[41] "2017 Perceptions Study: Analysis of Invoice-to-Cash Practices and Preferences of Supplier Organizations" by Ernie Martin and Patrick Madden, ReceivableSavvy, 2017.

Another aspect of the value proposition that can be meaningful to suppliers is shortening the average number of days that receivables are outstanding. Among respondents to the Strategic Treasurer study, 35 percent of companies indicated a willingness to pay a fee, or provide a discount, if that would result in earlier payment. Among respondents to the ReceivableSavvy 2017 Perceptions Study, "getting paid faster is the number one issue among suppliers in relation to invoice submission." And this issue grew in importance between the 2015 and 2017 surveys: An overwhelming 90 percent cited the issue in 2017, up from 83 percent in 2015. In response to a question asking what strategies these vendors pursued to reduce the length of time to payment, 50 percent said they were accepting card payments, the most frequently named strategy. Two of the other top four–named strategies are "providing incentives for early payment" and "giving discounts for early payment." Depending on the amount of discount given or incentives offered, the vendor cost to accelerate receipt of payments may be comparable with the discount rates charged by their payment acquirer to provide card acceptance capability.

Despite still being less preferred than ACH and checks as a way to receive payments, cards nonetheless are accepted by 61 percent of suppliers responding to the ReceivableSavvy 2017 Perceptions Study. Given how important quick payment is to suppliers and their dependence on some form of discount or cost to make that happen, paying a discount rate may have been determined to have provided enough benefit to justify the cost to these suppliers.

As cost accounting more precisely reveals the component costs related to payments, both parties to commercial transactions can make better informed and comparatively priced decisions about the methods they use to make payments and accept payments. The enhanced visibility into the fully loaded costs of settling these transactions, along with greater integration of payments into automated business processes, has produced an environment for decision-making in procurement, treasury, accounts payable, and other corporate departments very different from what existed in a previous era. The functions of commercial cards — some original and some rearticulated — may be finding increasing compatibility within this environment.

V. Conclusion

The trends that Martien described in early 2017 have been validated by other sources as the year progressed. TransUnion reported the highest numbers of consumers having credit cards since 2005, driven somewhat by tens of millions of the millennial generation entering the financial services market over the ensuing years. The limited credit history of these young adults can also explain some measure of the 8.9 percent growth in subprime cardholders reported by TransUnion.[42] TransUnion's findings also reinforced Martien's premise that card issuers are managing the risk of extending credit to nonprime borrowers by limiting credit line exposure. Comparing average credit lines with their 2010 levels, TransUnion found that average lines had increased by more than $4,000 for super-prime borrowers, and by about $150 in the prime-plus tier. Average credit lines extended in other risk tiers had all declined, with averages down more than $1,000 in the subprime tier.

Equifax's June 2017 Quarterly U.S. Consumer Trends report contained confirming evidence of increases in credit card accounts, outstandings, and a modest increase in delinquencies. Within this overall growth trend, it is noteworthy that Equifax found that GPCC use "has been steadily increasing since the Financial Crisis, but it has not yet hit pre-crisis levels." Within the private-label card category, however, by the end of 2016, Equifax found debt had reached an all-time high, surpassing pre-crisis levels.[43] A more recent update from Equifax revealed that GPCC outstandings continued to rise, reaching more than $720 billion in both September and October 2017. Compared with those months in 2016,

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[42] TransUnion data and analysis taken from "An Industry Point of View: Bankcard," a presentation by Tamer El-Rayess and Nidhi Verma at Card Forum, May 2017, and "Consumer Access to Credit Cards Grows to Highest Level since 2005 as Mix of Card Issuers Changes," *NASDAQ Globe Newswire*, May 9, 2017, https://globenewswire.com/news-release/2017/05/09/980859/0/en/Consumer-Access-to-Credit-Cards-Grows-to-Highest-Level-since-2005-as-Mix-of-Card-Issuers-Changes.html.

[43] See "Quarterly U.S. Consumer Trends," Equifax release July 27, 2017, based on June 2017 data, https://investor.equifax.com/~/media/Files/E/Equifax-IR/reports-and-presentations/events-and-presentation/consumer-credit-trends-report-2q-2017.pdf, and "Are American Consumers Taking On Too Much Debt?" by Jeff Desjardins, *Visual Capitalist*, December 21, 2016, www.visualcapitalist.com/american-consumer-debt/. Two other credit categories registering all-time highs were student loans and auto loans.

September 2017 registered a 7.5 percent increase and October 2017, a 7.0 percent increase. For private label cards, balances were down 0.1 percent in both months compared with 2016 levels.[44]

While the upward trend in delinquencies continued to be reported on during 2017, the consensus among observers seemed to be that the increases from post-recession lows, rather than generating excessive concern, largely reflect a normalized environment in which issuers and households are taking somewhat more exposure to risk than what could be tolerated in a worse economy. Bloomberg quoted a Morningstar Inc. analyst in a June article: "We're not at a point where people should really be panicking … it's more of a move to a normalization of losses."[45] Investor concerns were elevated somewhat by August as loss rates continued their ascent and as issuers raised projections for charge-offs and announced increases in loan-loss provisions. Within that context, a *Wall Street Journal* article still reported that losses "remain low compared with historical levels" and that "increases are largely a return to normal after a period of abnormal lows."[46]

The Federal Reserve captures and reports 30-day delinquencies on combined general purpose and private-label consumer credit cards every quarter in its *Charge-Off and Delinquency Rates on Loans and Leases at Commercial Banks* release. It shows that delinquencies have risen (or been flat) every quarter since 1Q2015, reaching 2.47 percent in 2Q2017, when it was still well below the 6.77 percent rate recorded in 2Q2009.[47] Credit card use has increased outside the consumer market, too. Along with bank loans, credit cards are a leading source of financing for small businesses, with more than one-third of small enterprises reporting using one or both of these two types of loans. In addition to their credit utility, use of credit cards as a payment form has increased in recent years as the economy has improved and as proactive marketing of small business debit cards appears to have tapered off.

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[44] US National Consumer Credit Trends Report: Portfolio, December 8, 2017, Equifax, Inc.

[45] "Card Issuers Tumble after Synchrony Sees Higher Write-Offs" by Jennifer Surane, Bloomberg.com, June 14, 2016, https://www.bloomberg.com/news/articles/2016-06-14/credit-card-issuers-fall-after-synchrony-sees-higher-write-offs.

[46] "Credit-Card Losses Flash Warning" by AnnaMaria Andriotis, *Wall Street Journal*, August 1, 2017, pp A.1–2.

[47] See https://www.federalreserve.gov/releases/chargeoff/delallsa.htm.

For use in high-dollar corporate payments, cards have experienced the greatest metamorphosis from their core credit and payment functions. In this environment, where huge dollar amounts are routinely exchanged between trading partners, opportunity for return on investment from experimentation and customized solutions can be achieved in an acceptable timeframe. For many of the innovations that have occurred in this space, providing value to the companies on both sides of these trades, particularly by incorporating business process automation, has become a key standard of excellence.

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