

Paying with Plastic: Maybe Not So Crazy

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As a former chairman of the Federal Trade Commission has observed, credit cards are one of the great innovations of the twentieth century.¹ On par with the microprocessor and the cell phone, credit cards and the larger family of payment cards have transformed how people live.² Payment cards provide a safe, secure, and convenient alternative to cash and checks, reducing the cost and risk of payment. Since the introduction of the first general purpose credit cards³ in 1958, the ownership and usage of credit cards have extended to consumers of nearly all socioeconomic groups. As of 2001, 76.2 percent of U.S. households held at least one general purpose credit card, and such credit cards accounted for nearly 20 percent of U.S. personal consumption expenditures.⁴

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¹ Timothy J. Muris, *Payment Card Regulation and the (Mis)Application of the Economics of Two-Sided Markets*, 5 Colum Bus L Rev 515 (forthcoming 2005) (arguing that competition in the issuer-consumer and issuer-merchant markets is largely responsible for the benefits of credit cards, “one of the great inventions of the 20th century”).

² Although the phrase “credit card” is often used to describe all plastic payment cards, as we explain later, only some plastic payment cards feature an attached credit line. The larger family of plastic cards that facilitate payment, including credit cards, charge cards, and debit cards, are generally described as “payment cards.” See David S. Evans and Richard Schmalensee, *Paying with Plastic: The Digital Revolution in Buying and Borrowing* 1 (MIT 2d ed 2005).

³ Unlike store cards, which allow consumers to make purchases only at the merchant who issued the card, general purpose credit cards (that is, Visa, MasterCard, American Express Optima, and Discover) allow consumers to make purchases at all merchants that agree to accept the card for payment.

⁴ Personal consumption expenditures (PCE) refer to household expenditures on durables, nondurables, and services, and excludes spending on housing and automobiles. See *Personal Consumption Expenditures by Major Type of Product (A) (Q)*, Table 2.3.5, National Income and Product Accounts (Bureau of Economic Analysis 2005), online at <http://www.bea.doc.gov/bea/dn/nipaweb/TableView.asp?SelectedTable=65&FirstYear=2003&LastYear=2005&Freq=Qtr>

Notwithstanding their obvious popularity, credit cards have been viewed warily, largely because they allow consumers to make purchases that they could not afford if forced to draw on readily available funds.⁵ In the past, critics described credit cards and the so-called “credit card society” as “dangerous and even sinful.”⁶ More recently, they have pointed to “seductive” features of credit cards, such as zero annual fees, teaser rates, and rewards for usage.⁷ They claim that credit card issuers use these features to dupe consumers into acquiring and using the cards. Lured by short-term features, consumers rack up extensive debt burdens, leading to financial hardship, delinquency, or even bankruptcy.⁸

This critique raises the question of whether credit cards enhance consumer welfare. Traditionally, economists would have had little patience with this line of argument. Applying the rational choice model of consumer behavior, they would have insisted that consumers can be trusted to make decisions that will increase their expected utility. Proof that credit cards increase consumer welfare would have been

(visited Dec 30, 2005); Ana M. Aizcorbe, Arthur B. Kennickell, and Kevin B. Moore, *Recent Changes in U.S. Family Finances: Evidence from the 1998 and 2001 Survey of Consumer Finances*, 89 Fed Res Bull 1, 25 (Jan 2003), online at <http://www.federalreserve.gov/pubs/bulletin/2003/0103lead.pdf> (visited Dec 30, 2005) (reporting the number of cards per family); 784 *The Nilson Report* 1, 5–9 (2003) (reporting credit card dollar volume); 760 *The Nilson Report* 1, 6–9 (2002).

⁵ See generally George Loewenstein and Ted O’Donoghue, “*We Can Do This the Easy Way or the Hard Way*”: *Negative Emotions, Self-Regulation, and the Law*, 73 U Chi L Rev 183 (2006) (describing how credit cards ease “the pain of paying”); Oren Bar-Gill, *Seduction by Plastic*, 98 Nw U L Rev 1373 (2004). See also Teresa A. Sullivan, Elizabeth Warren, and Jay Lawrence Westbrook, *As We Forgive Our Debtors: Bankruptcy and Consumer Credit in America* 179 (Oxford 1989) (complaining that credit cards pave the way for “the seductiveness of incremental irresponsibility”).

⁶ See Joseph Nocera, *A Piece of the Action: How the Middle Class Joined the Money Class* 93 (Simon & Schuster 1994) (describing part of “the central contradiction embedded in America’s historic attitude toward credit”). This hostility to consumer credit has a long history. Lendol Calder collects and discusses this criticism from the late nineteenth century through the Great Depression in his excellent book, *Financing the American Dream: A Cultural History of Consumer Credit* (Princeton 1999). As he observes, Victorians described debt as “‘a calamity,’ ‘an oppressive and degrading incubus,’ [and] ‘an inexhaustible fountain of dishonesty.’” Id at 93, quoting William M. Thayer, *The Ethics of Success* 274 (Thayer 1893), Franklin Wilson, *Wealth: Its Acquisition, Investment, and Use* 149 (American Baptist 1874), and Henry Ward Beecher, *Lectures to Young Men on Various Important Subjects* 32 (Alden 1890).

⁷ See Bar-Gill, 98 Nw U L Rev at 1374 (cited in note 5) (enumerating “unique features of the credit card contract”). Teaser rates are introductory rates that are very low or even zero. They often are followed by high long-term interest rates. See id at 1392.

⁸ See, for example, Bar-Gill, 98 Nw U L Rev at 1385–86 (cited in note 5). But see Todd J. Zywicki, *An Economic Analysis of the Consumer Bankruptcy Crisis*, 99 Nw U L Rev 1463, 1496–98 (2005) (arguing that the apparent correlation between increasing credit card use and increasing bankruptcy filings may be explained by consumers’ use of credit cards as a “last resort” or by the strategic use of unsecured credit card debt in anticipation of bankruptcy).

found in the choice by large numbers of consumers to carry and use such cards.⁹

Over the past thirty years, however, a group of economists, psychologists, and other social scientists (including lawyers) have recognized that real people do not always make decisions in the way that the rational choice model predicts.¹⁰ These behavioralists have used laboratory experiments to identify certain biases in human decision-making. The experimental results suggest that at least some people make certain decisions in ways that make them worse off. They suggest that observed choices are not as reliable an indicator of true consumer preferences as traditionally assumed (for example, the fact that McDonald's has sold billions of hamburgers does not mean that consumers truly prefer them to other sources of calories and nutrition).

Some behavioralists have used these experimental results to argue that credit cards have not, on balance, made consumers better off and to claim that many consumers cannot be trusted to use them wisely.¹¹ One such theory revolves around the premise that consumers do not have stable preferences over time and fall prey to a phenomenon known as hyperbolic discounting.¹² Under this theory, consumers will pay close attention to the short-term features of credit cards such as low annual fees, low introductory interest rates (also known as teaser rates), and rewards, but ignore long-term features including

⁹ This has been the dominant view of the utility of consumer debt since E.R.A. Seligman published his two-volume treatise on installment debt, *The Economics of Installment Selling: A Study in Consumers' Credit* (Harper 1927). See also Calder, *Financing the American Dream* at 237–54 (cited in note 6) (discussing how Seligman eliminated the distinction between “production credit” and “consumption credit,” and vindicated the idea of installment purchases).

¹⁰ See, for example, Amos Tversky and Daniel Kahneman, *Judgment under Uncertainty: Heuristics and Biases*, in Daniel Kahneman, Paul Slovic, and Amos Tversky, eds, *Judgment under Uncertainty: Heuristics and Biases* 3 (Cambridge 1982) (discussing common heuristics and resulting errors); Richard Thaler, *Toward a Positive Theory of Consumer Choice*, 1 *J Econ Beh & Org* 39, 39 (1980) (substantiating Kahneman and Tversky's prospect theory as a descriptive hermeneutic); Daniel Kahneman and Amos Tversky, *Prospect Theory: An Analysis of Decision under Risk*, 47 *Econometrica* 263, 263 (1979) (critiquing expected utility theory and describing prospect theory). See also Cass R. Sunstein and Richard H. Thaler, *Libertarian Paternalism Is Not an Oxymoron*, 70 *U Chi L Rev* 1159, 1163 (2003) (“The false assumption is that almost all people, almost all of the time, make choices that are in their best interest or at the very least are better, by their own lights, than the choices that would be made by third parties.”).

¹¹ As Calder documents, this is a question that people have been asking for quite a long time. See Calder, *Financing the American Dream* at 91–104 (cited in note 6) (summarizing the Victorian “ethics of debt”). For further examples, see W. Cunningham, *The Use and Abuse of Money* 175–76 (Scribner 1891) (“If a man burdens his estate not in order to enable him to make permanent improvements, but in order to maintain an extravagant expenditure, he is at least acting foolishly, and it is wrong to help him make a fool of himself.”).

¹² See Bar-Gill, 98 *Nw U L Rev* at 1411 (cited in note 5) (“The long-term costs to consumers [of credit cards] will generally outweigh the short-term benefits.”). See also Loewenstein and O'Donoghue, 73 *U Chi L Rev* at 185 (cited in note 5) (explaining how rationalist economic models do not completely account for forms of self-regulation).

long-term interest rates. Consumers afflicted by hyperbolic discounting will amass more debt than they intended upon card acquisition and will end up paying high interest rates, resulting in a decreased quality of life. In the extreme case, consumers will acquire more debt than they can afford and end up in default or bankruptcy.¹³

Based on these hypotheses, behavioralists call for increased government regulation of credit cards. The exact nature of this government intervention is the subject of debate. Some behavioralists advocate for “hard paternalism.” They suggest considering a ban on the issuance of credit cards¹⁴ or to limit the terms on which credit cards can be offered by, for example, capping interest rates or eliminating rewards programs.¹⁵ Other behavioralists advocate “soft paternalism.” They do not want government to eliminate options. They suggest further regulation of the type of information presented to consumers about credit cards¹⁶ or publicly funded campaigns describing the effects of overborrowing.¹⁷

Although the work in this area to date is interesting, we believe that it is flawed. The authors generally overlook the ways in which general purpose credit cards have increased payment options at the point of sale and provided additional access to credit. They do not discuss the effects of prior government intervention including, for example, interest rate caps.¹⁸ Above all, the policy recommendations generally lack empirical support. Critics claim that debt levels can be explained by attributes of credit cards such as low annual fees, teaser

¹³ See Bar-Gill, 98 Nw U L Rev at 1399–1400 (cited in note 5) (describing the incremental slide into debt). See also Teresa A. Sullivan, Elizabeth Warren, and Jay Lawrence Westbrook, *The Fragile Middle Class: Americans in Debt* 111 (Yale 2000) (claiming that many people “fall[] a little farther behind on their cards every month until bankruptcy is the only way out”).

¹⁴ See Loewenstein and O’Donoghue, 73 U Chi L Rev at 204 (cited in note 5) (“The simple policy response suggested by our perspective would . . . ban credit cards as they currently exist.”).

¹⁵ See, for example, Bar-Gill, 98 Nw U L Rev at 1416–27 (cited in note 5) (urging “consideration” of ex ante interventions ranging from additional disclosure to price caps to more liberal discharge of credit card debt in bankruptcy proceedings).

¹⁶ See Colin Camerer, et al, *Regulation for Conservatives: Behavioral Economics and the Case for “Asymmetric Paternalism,”* 151 U Pa L Rev 1211, 1232–36 (2003) (describing the Federal Truth in Lending Act as a model of “asymmetrically paternalistic policies”).

¹⁷ See Cass R. Sunstein, *Boundedly Rational Borrowing*, 73 U Chi L Rev 249, 261–63 (2006) (describing how a debiasing campaign might be undertaken). But see Loewenstein and O’Donoghue, 73 U Chi L Rev at 190 (cited in note 5) (suggesting that such campaigns may only make consumers worse off by aggravating the costs of the loss of self-control).

¹⁸ Bar-Gill, for example, suggests that a credit card usury law should be reconsidered but does not discuss any of the effects of prior caps on interest rates. See Bar-Gill, 98 Nw U L Rev at 1422–23 (cited in note 5). At one time, state regulations on interest rate caps, or usury ceilings, were quite common. See Calder, *Financing the American Dream* at 114–15 (cited in note 6) (estimating that in 1881, all but fourteen of the forty-seven states had usury regulations). These regulations had very serious negative consequences for would-be borrowers. See id at 119.

rates, and rewards,¹⁹ but existing studies do not rigorously link these attributes to credit card balances.

In this Essay, we take the first step of what we hope will result in a different approach to the study of consumer behavior with respect to credit cards. We proceed in two parts. In Part I, we offer a brief history of selected developments in the payment and credit industries over the past hundred years. This Part clarifies how credit cards have increased payment options at the point of sale and illuminates the effects of past limits on the availability of credit. In Part II, we identify several propositions regarding consumer credit card decisions from the behavioralist literature on the industry. Using a previously untapped database that Visa has developed to track changes in consumer preferences with respect to payments, we test the claim that consumers make decisions about the use of credit cards that diverge, predictably, from the rational choice model *and* that are clearly inconsistent with their own self-interest. Our results tend to support the predictions of the rational choice model and indicate that, in fact, consumers may well be able to use credit cards wisely after all.

I. A BRIEF HISTORY OF PAYMENT METHODS AND CONSUMER CREDIT

Credit has always been a feature of the consumer payment landscape in the United States, facilitating transactions and financing purchases. However, the introduction of the credit card in the mid-twentieth century revolutionized both roles of consumer credit. As such, credit cards have helped transform two aspects of the U.S. economy: retailing and lending.²⁰

A. The Evolving Payments Landscape

The way people pay for purchases has changed considerably over a relatively short period of time. Even as the precise means of value exchange grew from in-kind exchange to include specie, then paper notes, and then electronic payment, the use of credit to facilitate payment has remained a constant, though its role and importance have changed over time.

Paper currency and checks did not become the dominant means of value exchange in this country until the late nineteenth century.²¹

¹⁹ See, for example, Bar-Gill, 98 Nw U L Rev at 1385–86, 1411–16 (cited in note 5) (noting rising bankruptcies and listing “reasons for intervention in the credit card market”).

²⁰ Evans and Schmalensee, *Paying with Plastic* at 53–114 (cited in note 2).

²¹ See Calder, *Financing the American Dream* at 75–80 (cited in note 6) (describing the gradual expansion of cash as a medium of exchange).

Until the Civil War, most Americans lived on farms outside of major population centers. Outside of those population centers, the most traditional forms of value exchange—gold and silver—were quite scarce. People paid for things as people had for centuries in agrarian economies: with produce, eggs, butter, or some personal service.²² Personal credit was an important feature of these transactions as farmers typically provided a promise of future delivery in exchange for immediate receipt of whatever supplies they desired.²³ As in-kind exchange gave way to cash and checks at the end of the nineteenth century, personal credit took a new form. Instead of promising to pay for their current purchase with a future delivery of produce, eggs, or butter, consumers promised to pay off their debts to merchants with cash or check.²⁴

When the payment card emerged to supplement and replace checks and cash as a medium of value exchange, credit tagged along again. The first general purpose payment card was not a “credit” card but rather a “charge” card. Frank McNamara came up with the idea of a charge card when he reached into his pocket at lunch one day in 1949 and realized that he had left his wallet at home. He conceived of a company, which he later founded and named Diners Club, that would issue cards to consumers and sign merchants to accept those cards. Consumers would pay an annual fee for the privilege of carrying the card and would promise to pay Diners Club the face amount of any bill that they paid with their cards. Merchants that signed up to take the cards would promise to accept all Diners Club cards and agree to sell the right to collect the bills “paid” by cardholders at a discount to their face value.²⁵

Initial attempts to launch a true credit card on the model of the general purpose charge card pioneered by Diners Club failed. A few banks tried to extend the concept of a charge card by allowing cardholders to pay off only a portion of their purchases at the end of every month. These attempts were hamstrung by prohibitions on interstate banking and, in many cases, intrastate branching. Banks found that they could not sign enough merchants or issue enough cards to sustain a viable business.²⁶

That changed in 1958 when Bank of America introduced its credit card.²⁷ Bank of America had a couple of advantages over its predeces-

²² See *id.* at 76.

²³ See *id.* at 59 (“In the early days of the Republic . . . buying goods on ‘book credit’ . . . for thirty days or a crop season was almost the universal practice among American households.”).

²⁴ See *id.*

²⁵ Evans and Schmalensee, *Paying with Plastic* at 54 (cited in note 2).

²⁶ See *id.* at 56.

²⁷ See *id.*

sors. For one thing, Bank of America was based in California. At the time, California had an economy larger than Japan's, and it permitted intrastate branching.²⁸ This meant that Bank of America, unlike banks in other parts of the country, could sign enough merchants and issue enough cards to support a viable business. Also, as described below, Bank of America had considerable experience issuing small personal loans to people who otherwise did not have access to banks.²⁹

Bank of America launched its new card in Fresno, California, with three hundred retailers and sixty thousand cardholders. By the end of the following year, twenty-five thousand merchants and nearly two million cardholders had signed up. Notwithstanding the bank's expertise, the card program operated deep in the red for its first few years of existence. It did not turn an operating profit until 1961.³⁰

As Bank of America's program headed toward profitability, the field of competing card systems became more crowded. A number of banks in populous states launched credit card programs using Bank of America's system as a guide. In addition, American Express, with a long-established traveler's check business, launched a charge card following the Diners Club model. American Express differentiated its card by charging consumers and merchants higher fees, giving its product an air of exclusivity. In order to better compete with the two national charge card systems, the credit-card issuing banks banded into national associations that we now know as Visa and MasterCard.³¹

For the next fifteen years, the payments landscape remained static in terms of the choices available to consumers. In 1975, another new payment form appeared: the debit card.³² The new card was developed by a group of Visa executives.³³ As they conceived the product, it had two important attributes. For merchants, the new card would offer guaranteed payment. The Visa payment system would guarantee payment to merchants on transactions initiated with the card so long as merchants correctly authorized transactions. For consumers, the card would offer universal acceptance. Consumers could use the card

²⁸ Id.

²⁹ See Nocera, *A Piece of the Action* at 17–18, 22 (cited in note 6) (describing the “populist entrepreneur” A.P. Giannini, founder of Bank of America, and his approach to banking).

³⁰ See Evans and Schmalensee, *Paying with Plastic* at 57 (cited in note 2).

³¹ See id at 64–66.

³² See Evans and Schmalensee, *Paying with Plastic* at 81 (cited in note 2) (noting that “[d]ebit cards had been around in the United States since 1975”). See generally Kevin Green and Lacey Plache, *The Competitive Role of Honor All Cards in the Development and Growth of Debit Usage in the United States* (working draft) (on file with the authors).

³³ See Nocera, *A Piece of the Action* at 307–08 (cited in note 6) (discussing Visa CEO Dee Hock's vision of debit cards as the future centerpiece of American consumer transactions). See generally Green and Plache, *The Competitive Role of Honor All Cards* (cited in note 32).

wherever Visa cards were accepted, but their purchases would draw down their checking account balances, not a line of credit.³⁴

In the thirty years since the introduction of the debit card, the variation in the terms of and features associated with payment cards has increased. Consumers now have a choice among cards with many different types of benefits and fee structures (for example, no annual fee cards, cards with annual fees but fixed interest rates), varying levels of credit (for example, cards with very high credit limits or even no absolute credit limit), cobranded cards, cards that offer rewards programs such as frequent flyer miles, debit cards, deferred debit cards, host-based stored-value cards, cards secured by cash deposit accounts or third-party guarantees, cards that are used to provide access to other types of credit such as home equity loans, and charge cards for which the cardholder's checking account is automatically debited monthly.³⁵

Consumers increasingly have taken advantage of the additional payment choices available to them. As a result, cash and check have seen their once dominant positions erode. Between 2000 and 2003, check volume declined for the first time in history. The total number of checks paid dropped from 41.9 billion to 36.7 billion as the total number of noncash payments rose at a combined rate of 3.8 percent over this period.³⁶ The changes in shares of spending are even more dramatic. In 1970, cash and check, together, accounted for more than 90 percent of personal consumption expenditures.³⁷ By 2004, the combined share of these two forms of payment had fallen to 61 percent.³⁸

The volume of general purpose payment cards has moved in the opposite direction. In 1970, general purpose payment cards accounted for approximately 3 percent of personal consumption expenditures.³⁹ By 2004, this share had surpassed 30 percent.⁴⁰ This aggregate number

³⁴ MasterCard developed a competing debit card several years later. Also in the late 1970s, a group of banks introduced the so-called PIN (online) debit card, which similarly accessed checking account balances to pay for purchases but required entering a PIN at the point-of-sale and thus had more limited acceptance than the Visa and MasterCard debit cards. See Evans and Schmalensee, *Paying with Plastic* at 80 (cited in note 2) (noting that in 1990, PIN cards constituted approximately 31 percent of payment cards and were not widely used or accepted by merchants). See generally Green and Plache, *The Competitive Role of Honor All* (cited in note 32).

³⁵ See generally Evans and Schmalensee, *Paying with Plastic* (cited in note 2); Green and Plache, *The Competitive Role of Honor All Cards* (cited in note 32).

³⁶ See Dove Consulting, *Payments Migration: The Turning of the Tide 2* (2005), online at http://www.doveconsulting.com/article_download/Payments_Migration_2.pdf (visited Dec 30, 2005).

³⁷ See Evans and Schmalensee, *Paying with Plastic* at 85 (cited in note 2).

³⁸ See Symposium presentation, slide 11 (June 17, 2005) (on file with authors) (citing data from Visa Business Research and Reporting).

³⁹ See Evans and Schmalensee, *Paying with Plastic* at 85 (cited in note 2).

⁴⁰ See Symposium presentation, slide 11 (cited in note 38).

may understate the importance of general purpose payment cards. For example, payment cards account for more than 60 percent of spending in certain merchant categories such as the Internet and air travel. In any case, credit cards and other payment cards have expanded the set of payment methods available to consumers and, as a result, significantly altered the payments landscape.

B. Democratization of Debt

Credit cards have participated in the transformation of another segment of the economy, the consumer lending business. From colonial times to the early twentieth century, bank credit was the exclusive province of economic and social elites. Financial instruments now taken for granted did not exist. In 1900, banks did not issue consumer home mortgages, personal lines of revolving credit, or general purpose credit cards. A Roosevelt or a Rockefeller could persuade a commercial bank to extend a personal loan. But the vast majority of U.S. households had no access to bank credit and, as a result, faced limitations on the amounts and the terms at which they could borrow.⁴¹

People needing credit to pay unexpected bills, start businesses, or buy homes, had two options. They could borrow money from family or friends,⁴² or they could turn to unlicensed lenders such as pawn brokers and loan sharks.⁴³ Both sources of credit had their shortcomings. Family and friends often had few resources to share. Pawn brokers and loan sharks offered appallingly bad terms, charging rates that typically hit 300 percent per year.⁴⁴ They also used aggressive and embarrassing collection practices to enforce repayment obligations that could not be enforced in court.⁴⁵

Notwithstanding the costs and risks of dealing with unlicensed lenders, a significant portion of the population had no choice. Pawn shops were a common feature of most urban environments. In 1897,

⁴¹ See Alan Greenspan, Remarks, Fourth Annual Community Affairs Research Conference (Apr 8, 2005), online at <http://www.federalreserve.gov/boarddocs/speeches/2005/20050408/default.htm> (visited Dec 30, 2005) (“Only the affluent, such as prominent merchants or landowners, were able to obtain personal loans from commercial banks.”).

⁴² See Calder, *Financing the American Dream* at 60–64 (cited in note 6).

⁴³ See *id.* at 42–55.

⁴⁴ See *id.* at 48, 50–51 (estimating rates between 300 percent and 1,000 percent). See also Alan Greenspan, Remarks, Economic Development Conference of the Greenlining Institute (Oct 11, 1997), online at <http://www.federalreserve.gov/boarddocs/speeches/1997/19971011.htm> (visited Dec 30, 2005) (putting the range at between 120 percent and 240 percent).

⁴⁵ See, for example, Calder, *Financing the American Dream* at 54 (cited in note 6) (describing the use of “bawlerout[s]” to trap “the delinquent borrower before co-workers and family in order to browbeat him publicly for being a sorry deadbeat”).

New York had 134 licensed pawnbrokers, and San Francisco had 243.⁴⁶ In some neighborhoods, virtually the entire population had a pawn ticket at all times and as many as twelve during the winter (when factories typically closed down).⁴⁷ Loan sharks also did a good business, with some studies estimating that they provided loans to one out of five workers.⁴⁸ According to Alan Greenspan, the combination of bad terms and often violent collection practices reduced “many lower income wage-earners . . . to virtual serfdom.”⁴⁹

This picture began to change in the early part of the twentieth century. Three companies essentially pioneered the commercialization of the consumer lending business. The Beneficial Industrial Loan Corporation and the Household Finance Corporation provided consumer loans on a national basis, competing head-to-head with pawn brokers and loan sharks.⁵⁰ Although bankers generally regarded the consumer lending business as disreputable, preferring to make large loans to large companies, one western bank took a different view. Founded in 1904 by A.P. Giannini, the Bank of Italy, later renamed Bank of America, embraced the consumer lending business.⁵¹

All three companies proved very successful. By 1921, for example, Bank of America had grown into California’s largest bank, surpassing more established rivals such as Wells Fargo and Crocker. This success continued through the Great Depression. Consumer lending institutions such as Bank of America, the Beneficial Corporation, and Household Finance were consistently more profitable than commercial lenders. Consumers, as it turned out, could be counted upon to repay their debts even when their employers could not. Eventually banks got the message, and between 1929 and 1936 the number of banks issuing consumer loans tripled.⁵²

The Great Depression led politicians and regulators to reassess the consumer lending business as well. The Roosevelt Administration seized upon consumer credit as a means for jump-starting the economy. The federal government lent money directly to consumers to

⁴⁶ See *id.* at 46.

⁴⁷ See *id.* at 44, 48 (describing the prevalence of pawning in the Bowery district of New York and the increase in pawning activity in the winter).

⁴⁸ See *id.* at 52.

⁴⁹ Greenspan, Remarks, Economic Development Conference (cited in note 44).

⁵⁰ See Calder, *Financing the American Dream* at 147–48 (cited in note 6) (discussing the growth of the licensed consumer lending business from the late nineteenth century through the 1920s).

⁵¹ See Nocera, *A Piece of the Action* at 17–18 (cited in note 6) (describing Giannini’s goal in founding the Bank of America as making money available to “Italian immigrant farmers in the Santa Clara Valley”).

⁵² See Calder, *Financing the American Dream* at 285 (cited in note 6).

purchase appliances and to refinance mortgages through the Tennessee Valley Authority, the Farm Credit Administration, and the Home Owner's Loan Corporation. It created a whole new class of lenders by providing federal charters to credit unions with the Federal Credit Union Act of 1934. Roosevelt's Federal Housing Administration transformed the mortgage industry by developing a long-term, fixed-rate, self-amortizing mortgage. The standard terms of this mortgage facilitated the creation of a secondary market for mortgage loans, which attracted more capital and more competition to the industry.⁵³ This approach was quickly applied to other forms of consumer debt, including auto loans and revolving credit card loans.⁵⁴

More recently, lenders have increased the supply and lowered the cost of credit even further by adopting risk-based pricing strategies for consumer debt.⁵⁵ Although banks began to incorporate credit scores into underwriting decisions in the 1980s, those credit scores did not begin affecting loan terms until the mid-1990s. Taking advantage of advances in information technology, banks began to experiment with lending practices that varied loan terms with perceived credit risk. They expanded their underwriting models to look at characteristics thought to predict the risk of default including age, income, net worth, assets, and credit history.⁵⁶

These developments have transformed the consumer credit industry. More than seventy-five thousand institutions currently extend some form of credit to consumers. These institutions offer products ranging from thirty-year fixed-rate self-amortizing mortgages to home equity lines to student loans to credit cards. These products are available to anyone who has the perceived capacity to repay.⁵⁷ People who thirty years ago would not have been able to get an appointment to see a loan officer at a local bank can now get multiple offers for a home mortgage, an auto loan, or a credit card after filling out an application on the Internet.⁵⁸

⁵³ See *id.* at 279–83.

⁵⁴ *Id.*

⁵⁵ See Wendy Edelberg, *Risk-Based Pricing of Interest Rates in Consumer Loan Markets 1* (Dec 5, 2003), online at <http://www.federalreserve.gov/pubs/feds/2003/200362/200362pap.pdf> (visited Dec 30, 2005).

⁵⁶ See *id.* at 4–6 (reviewing the literature and data on estimating default risk).

⁵⁷ See Greenspan, Remarks, Economic Development Conference (cited in note 44) (“Overall, we have to conclude that at no time in American history has credit of all kinds been so available to so many.”).

⁵⁸ For an example, see Lending Tree, online at <http://www.lendingtree.com/stm3/aboutIt/default.asp?source=23972&siteid=&sourceid=23972&partner=> (visited Dec 30, 2005) (listing services provided).

American consumers have capitalized on the availability of credit. Nearly every U.S. household has some form of consumer credit. Floating rate, no-money-down home mortgages have made it possible for more people to own their own home than at any point in the nation's history. More people have credit cards than voted in either of the most recent presidential elections.⁵⁹ Even the poorest households in the United States have participated in the consumer credit revolution. By the end of 2001, 38 percent of households in the bottom income quintile had acquired a credit card.⁶⁰ The rates on these products do not even begin to approach the rates that were charged by loan sharks in the nineteenth century.⁶¹ In particular, in 2004, the average annual percentage rate (APR) on a credit card balance was 12.3 percent.⁶²

II. CREDIT CARDS—A PROVING GROUND FOR BEHAVIORAL ECONOMICS

On its face, the steady expansion of the availability of credit over the past hundred years seems like a positive development. To the extent that consumers want (or need) credit, they would seem to be better off getting that credit from reputable lenders, who issue debt on standard terms, than engaging in surreptitious and potentially illegal transactions with loan sharks and pawn brokers.⁶³ Nevertheless, a few critics of the consumer credit industry maintain that some consumers would be better off if their access to credit were eliminated or sharply curtailed.⁶⁴ These critics point out that consumer bankruptcies are at

⁵⁹ In the 2004 presidential election, 118,049,259 people cast ballots for John Kerry and George W. Bush, see *Elections 2004*, washingtonpost.com (Nov 24, 2004), online at <http://www.washingtonpost.com/wp-dyn/politics/elections/2004/> (visited Dec 30, 2005), and 101,455,899 did so for Bush and Al Gore in 2000, see Federal Election Commission, *2000 Official Presidential Election Results* (Dec 2001), online at <http://www.fec.gov/pubrec/2000presgeresults.htm> (visited Dec 30, 2005). The U.S. Census Bureau reports that 159 million adults had a credit card in 2000. See U.S. Census Bureau, *Statistical Abstract of the United States: 2002* 728, online at <http://www.census.gov/prod/2003pubs/02statab/banking.pdf> (visited Dec 30, 2005).

⁶⁰ Evans and Schmalensee, *Paying with Plastic* at 88–89 (cited in note 2).

⁶¹ See note 44 and accompanying text.

⁶² See Figure 1. See also *Federal Reserve Statistical Release: Consumer Credit*, online at www.federalreserve.gov/releases/g19/current (visited Dec 30, 2005) (reporting an average interest rate of 12.71 percent for all credit card plan accounts).

⁶³ See Todd J. Zywicki, *The Economics of Credit Cards*, 3 Chap L Rev 79, 99 (2000) (“[I]t is difficult to see how the plight of low-income earners can be improved by denying them the option of using credit cards [when] by making it more difficult to gain access to credit cards, their reliance on pawn shops and loan sharks increases.”).

⁶⁴ See note 14 and accompanying text.

all time highs.⁶⁵ They charge that the stories of people who have endured bankruptcy put a lie to the claim that people can be trusted to use debt to make themselves better off.⁶⁶

Proponents of the rational choice model disagree. According to this model, people can be relied upon to weigh expected costs and benefits, even in the face of uncertainty, and make decisions that improve their expected utility. Of course, as events play out, expectations may not be realized because of illness, accident, or layoff, but the rational choice model does not take issue with a consumer's decision regarding the acquisition of debt or levels of debt.

Behavioralists take a different view. Looking over three decades worth of laboratory experiments, they believe that people's decisions about debt can be expected to deviate from the rational choice model for a variety of reasons. Cass Sunstein has grouped these reasons into five categories:⁶⁷

Myopia or hyperbolic discounting. Some consumers can be expected to emphasize short-term gains at the expense of long-term costs. This description distinguishes short-term decisions that generate long-term distress from short-term decisions that simply allocate utility over time. Viewed through the lens of myopia or hyperbolic discounting, excessive borrowing on revolving lines of credit is a member of "the same general family with insufficient savings, . . . insufficient exercise, obesity, poor diet, and excessive smoking and drinking."⁶⁸

Cumulative cost neglect. This label applies to the borrowing that results from a long series of small purchases. Consumers who would not choose to acquire \$20,000 in revolving debt at a relatively high interest rate in a single purchase find themselves facing the same outcome by ignoring the effect of a long series of purchases over time.⁶⁹

Procrastination. This term describes people who end up paying interest charges or late fees simply because they neglect to pay their bills on time, even though they have sufficient funds available.⁷⁰

Unrealistic optimism. This phrase describes consumers who fail to assess the likelihood of their ability to pay back current obligations. Like young smokers who believe, wrongly, that they are soon likely to

⁶⁵ For a general overview of bankruptcies, see the information posted in U.S. Courts, *Bankruptcy Statistics*, online at <http://www.uscourts.gov/bnkrpctystats/bankruptcystats.htm> (visited Dec 30, 2005).

⁶⁶ See, for example, Elizabeth Warren, *The Bankruptcy Crisis*, 73 Ind L J 1079, 1087–1101 (1998) (disputing the credit industry's argument that bankruptcy is abused and instead blaming credit industry practices).

⁶⁷ See Sunstein, 73 U Chi L Rev at 251–53 (cited in note 17).

⁶⁸ Id at 252.

⁶⁹ Id at 251.

⁷⁰ Id at 251–52.

quit smoking, excessively optimistic borrowers fail to appreciate the difficulty associated with future payment obligations.⁷¹

Miswanting. This phrase applies to borrowing induced by purchases of things that do not promote welfare. To the extent that people use credit to fund miswanted purchases, they end up incurring debts without any offsetting increase in utility.⁷²

A. The Behavioralist View

The behavioralist criticism of the rational choice model as applied to consumer borrowing decisions can be tested. A comprehensive analysis of all of these claims is far beyond the scope of this Essay. Thus, we concentrate our efforts on a single claim: that the behavior of issuers and consumers in the credit card industry is best explained by consumer myopia or hyperbolic discounting.

Although the theoretical definitions of hyperbolic discounting can be quite daunting, the intuition behind hyperbolic discounting is fairly straightforward.⁷³ People apply a high discount rate to longer-term effects. This rate is only slightly higher than the discount rate applied to long-term, but still future, effects. As time passes, the phenomenon leads people to continue to pay much more attention to near-term rather than future costs.⁷⁴

As applied to the credit card industry, hyperbolic discounting provides a narrative that attempts to explain how credit card issuers and consumers behave. On this account, consumers do not deliberately choose credit cards and the associated lines of credit as means of payment and borrowing. Instead, they find themselves seduced to open accounts by issuers that eliminate annual fees, offer rewards, and set introductory interest rates at levels approaching (or even at) 0 percent,⁷⁵ regardless of the level of long-term card features, such as long-term interest rates. Consumers use their credit cards, instead of cash, checks, or other pay-now devices, to finance purchases at the low introductory rates and/or to acquire the miles, cash back discounts, and other rewards offered by credit card companies to encourage usage. Regardless of whether these consumers have the means to pay back their accumulating balances, the desire for instant gratification tri-

⁷¹ Id at 252.

⁷² Id at 253.

⁷³ Compare George-Marios Angeletos, et al, *The Hyperbolic Consumption Model: Calibration, Simulation, and Empirical Evaluation*, 15 J Econ Persp 47, 48–49 (2001) (describing the phenomenon of hyperbolic discounting in formal terms), with Bar-Gill, 98 Nw U L Rev at 1396–99 (cited in note 5) (laying out the intuition behind hyperbolic discounting).

⁷⁴ See Bar-Gill, 98 Nw U L Rev at 1396–99 (cited in note 5).

⁷⁵ See, for example, id at 1392 (“The teaser strategy works.”).

umphs over the experience of debt until the consumer has debts that cannot be paid back.⁷⁶

This story yields a number of testable hypotheses. If this story holds, we would expect to see the following:

- Long-term interest rates will remain fixed over time and will not respond to, among other things, changes in the opportunity cost of funds as issuers respond to biased consumer demand by offering lower annual fees and more rewards instead of lower long-term interest rates.
- Consumers with revolving balances will have cards with higher long-term APRs, lower annual fees, and higher rewards relative to consumers who do not carry balances on their credit cards, and cards with such features will be more likely to support revolving balances than cards without those features.
- Consumers, particularly those with revolving balances, will not substitute away from the use of credit cards when given a new pay-now alternative such as a general purpose debit card.

B. Testing This View

We test these hypotheses about consumer behavior with data collected through a long-running survey of consumer financial behavior commissioned by Visa U.S.A. known as the Payment System Panel Study (PSPS). Visa recruits participants in the PSPS from a nationally representative group of 475,000 households. From this population, Visa creates panels of approximately 1,600 people. In order to participate in the survey, an individual must be at least eighteen years of age, have an annual household income of at least \$10,000, and possess at least one plastic payment card. Each of the panels is then surveyed once a quarter. Participants fill out a questionnaire describing the features of their payment cards, such as annual percentage rate, annual fee, and card type (gold card, rewards card, etc.). Participants also provide demographic data for themselves and other members of their households. Finally, panelists complete diaries listing each purchase they make and the payment method used to make it (for example, Visa credit card, Visa debit card, American Express charge card, check, or cash). The survey data is available from 1994 to the present.

The PSPS database provides a window into both the supply and demand characteristics of the payment card industry. Using this data, we can get a picture of the types of credit cards carried by a representa-

⁷⁶ See id at 1396–99.

tive sample of the payment card-carrying public. By separating the credit card carrying public into revolving and nonrevolving cohorts, we can compare the cards that revolvers carry with the cards carried by consumers who do not revolve balances. We can also identify whether consumers tend to carry balances on cards with certain features. Through the diaries, we can see how consumers choose between the different payment forms at their disposal. The latter aspect of the survey enables us to see how choices among payment forms change as the menu of payment options changes. These data suggest that the phenomenon of hyperbolic discounting, however robust it is in the laboratory setting, does not explain the behavior of credit card issuers and their customers.

1. Hypothesis 1—Long-term interest rates will remain constant over time.

This hypothesis derives from the many articles commenting on the consumer credit card industry that insist that interest rates on credit cards are insensitive to changes in the opportunity cost of capital. Bargar-Gill, for example, uses the charge as the springboard for his behavioralist critique of the industry.⁷⁷ This oft-repeated claim has its roots in an article by Lawrence Ausubel. Ausubel used regression analysis to show that from 1982 to 1987, interest rates on credit cards were relatively insensitive to changes in banks' costs of funds.⁷⁸ But what might have been true for that narrow window of time is not true for all periods.

In fact, the data from the PSPS database reveal, quite emphatically, that interest rates on credit cards have indeed changed over the past decade.⁷⁹ From 1995 to 2004, the average annual percentage rate on a credit card fell from 15.2 percent to 12.7 percent. Interest rates on credit card balances, that is, cards revolving balances, also declined, falling from 14.8 percent to 12.3 percent over this period (see Figure 1).

Moreover, these rates appear quite sensitive to changes in the opportunity cost of capital. As shown in Figure 1, from 1995 to 2004, the return on ten-year treasury notes fell from 6.6 percent to 4.3 percent. Over this period, the spread between interest rates on credit cards and returns on treasury notes fluctuated between 8.3 percent and 9.3 percent.⁸⁰ These rate changes challenge the hyperbolic discounting claim that credit card issuers will not compete on long-term interest rates.

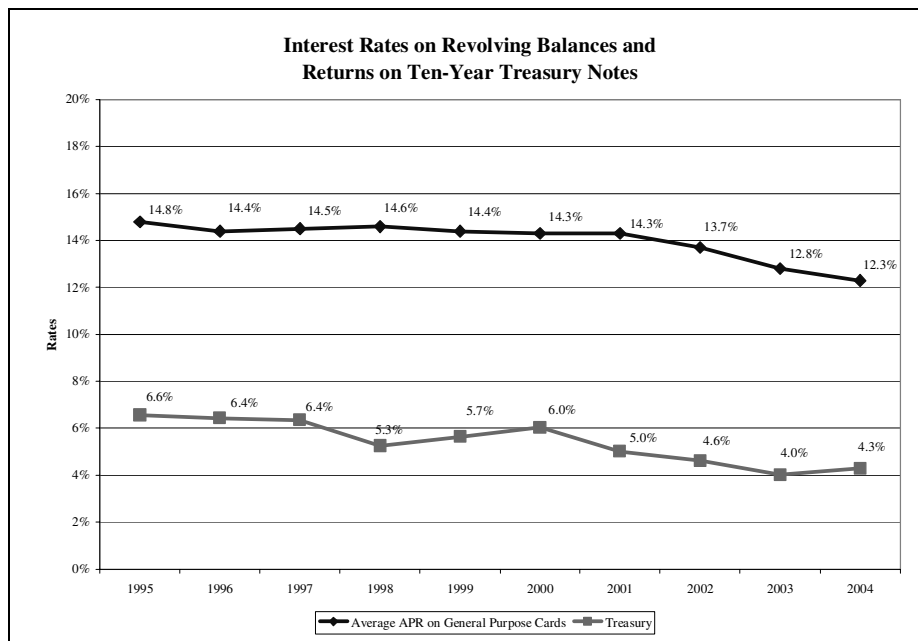
⁷⁷ See *id.* at 1383.

⁷⁸ See Lawrence M. Ausubel, *The Failure of Competition in the Credit Card Market*, 81 *Am Econ Rev* 50, 50 (1991) (attributing the stickiness of rates to consumer shortsightedness).

⁷⁹ See also, for example, Zywicki, 3 *Chap L Rev* at 110–19 (cited in note 63).

⁸⁰ See also Evans and Schmalensee, *Paying with Plastic* at 239–40 (cited in note 2).

FIGURE 1



- Hypothesis 2—Revolvers have cards with higher interest rates, lower annual fees, and more rewards than people who do not revolve, and balances are more likely on no fee and rewards cards than cards generally.

This hypothesis restates the basic claim that people are seduced into credit card debt by attractive credit card characteristics, such as teaser rates (accompanied by high long-term interest rates), low annual fees, and high rewards. If this claim is correct, we would expect revolvers to carry cards with higher interest rates and lower fees than cards carried by nonrevolvers. We would also expect consumers to be more likely to revolve balances on cards with no fees and higher rewards than on cards without these features.

To analyze this claim, we isolated two subpopulations from the PSPS population for the period 1994–2001—one group of people who carried credit card balances during the period surveyed, “revolvers,” and another group of people who did not carry balances, “nonrevolvers.”⁸¹ These two groups differed significantly from each other in terms

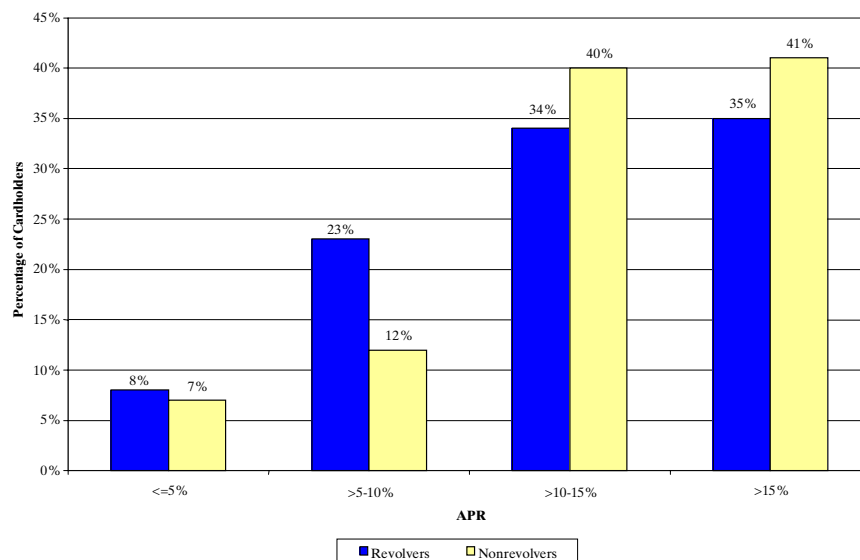
⁸¹ Revolver/nonrevolver status is determined from available balance information for the quarters in which each individual participated in the survey. Participants carrying a positive balance on at least one credit card in each quarter surveyed are classified as revolvers. Participants carrying a zero balance on all credit cards in each quarter surveyed are classified as nonrevolvers. Credit cards include Visa credit, MasterCard credit, American Express Optima, Dis-

of selected demographic characteristics. In particular, revolvers were younger and had lower income, less education, and larger households than nonrevolvers. Revolvers more frequently did not own their homes and were not married compared to nonrevolvers. Revolvers also carried more credit cards than nonrevolvers although nonrevolvers had higher shares of spending with credit cards than revolvers.

Once we identified these two groups, we compared selected features of the credit cards carried by each group. We calculated the average minimum APR for all credit cards held each quarter for each revolver and nonrevolver. As Figure 2 shows, the majority of cardholders held cards with average minimum APRs greater than 10 percent—69 percent of revolvers and 81 percent of nonrevolvers. However, significantly more nonrevolvers than revolvers held such cards. This result does not support the hypothesis that hyperbolic discounting results in consumers bearing credit card debt at high interest rates.

FIGURE 2

**Average Minimum APR on Credit Cards
Held by Revolvers and Nonrevolvers**



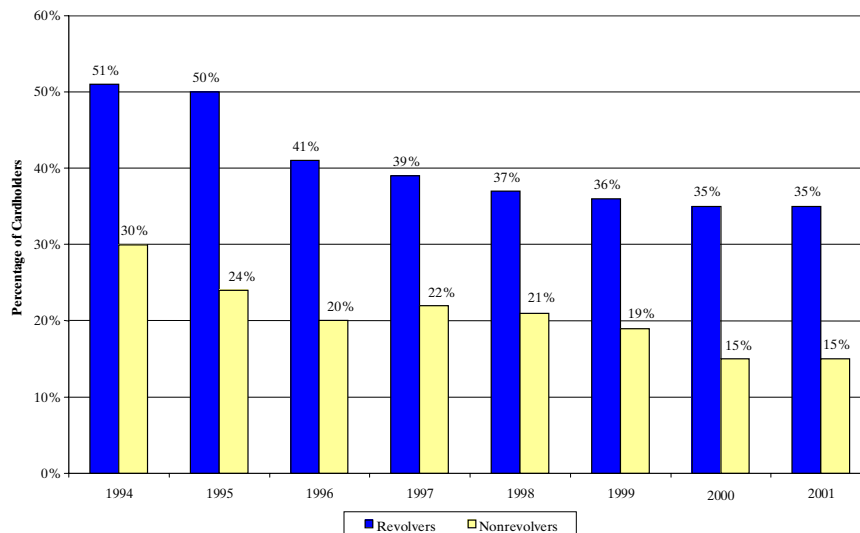
We also looked at whether survey participants carried credit cards with annual fees. The majority of revolvers and nonrevolvers did not carry any cards with positive annual fees and the percentage of partici-

cover, and store cards. All individuals did not participate in all quarters of the survey. The remainder of the PSPS population consists of people who carried a positive balance on at least one credit card in some quarters surveyed but not in other quarters.

pants not carrying any cards with annual fees increased over time. However, as shown in Figure 3, for those participants carrying cards with positive annual fees, a significantly greater percentage of revolvers than nonrevolvers carried at least one card with a positive annual fee in every year from 1994 to 2001. This result is inconsistent with the hypothesis that hyperbolic discounting results in consumers bearing credit card debt due to the attraction of a card with a zero annual fee.

FIGURE 3

**Percentage of Revolvers and Nonrevolvers
Holding Credit Cards with Annual Fees**



Using this same data, we then looked to see whether credit cardholders carrying cards with certain features, such as zero annual fees and rewards, would be more likely to carry balances on these cards than credit cardholders in general.⁸² For annual fees, we looked at the same period as that described above—1994 to 2001. As shown in Figure 4, cardholders with cards without annual fees are consistently less likely to carry balances on these cards than all cardholders. That is, a higher percentage of all cards have balances compared to the percentage of no annual fee cards with balances.⁸³ For rewards, we limited the comparison

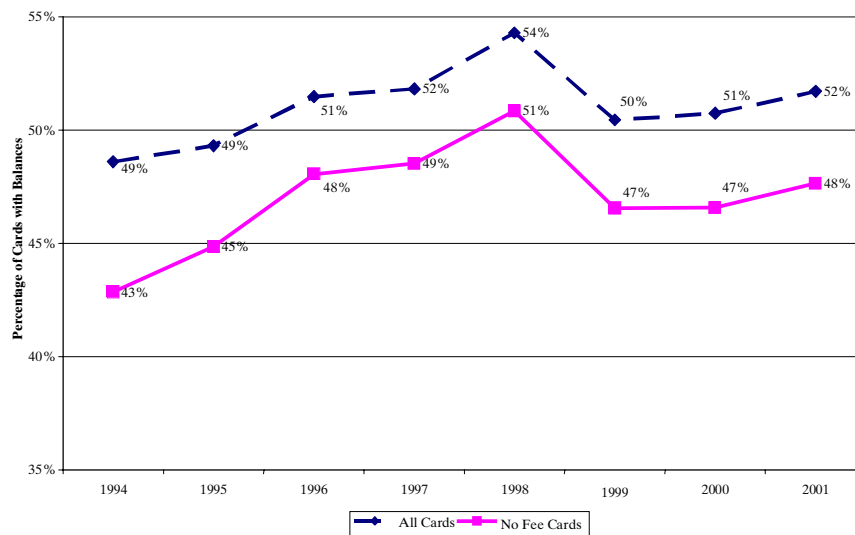
⁸² Cards with balances are identified as cards for which a positive balance is reported in any period surveyed during a calendar year. Cards without balances are identified as cards for which a zero balance is reported in all periods surveyed during a calendar year. We only include Visa and MasterCard credit cards in this analysis because there is greater variation in annual fees for these cards compared to other credit cards.

⁸³ An even higher percentage of cards with positive annual fees have balances.

to 2002 and 2003 because the PSPS did not explicitly distinguish between rewards and nonrewards cards until 2002. As shown in Figure 5, cardholders with rewards cards are less likely to have revolving balances on these cards than all cardholders. That is, a higher percentage of all cards have balances compared to the percentage of rewards cards with balances.⁸⁴ Both results confound the hypothesis that hyperbolic discounting results in consumer attraction to cards based on short-term features and the unintended acquisition of debt on these cards.⁸⁵

FIGURE 4

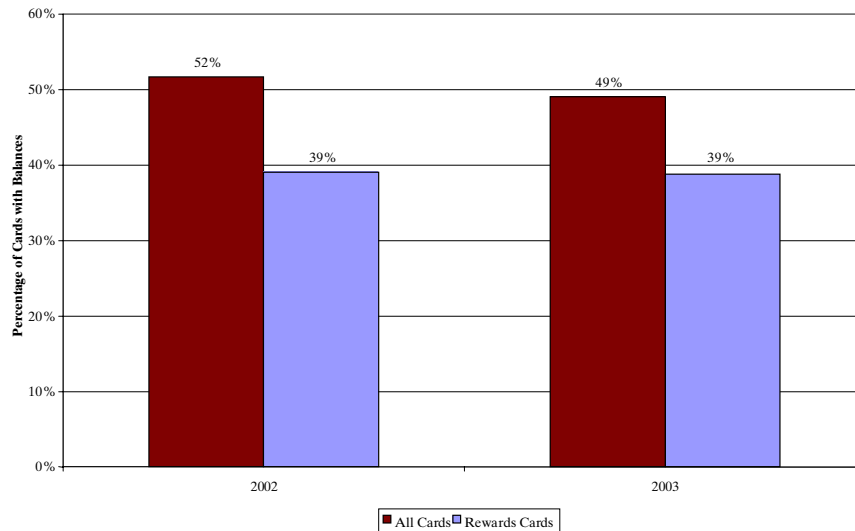
Cards with Balances: No Annual Fee Cards versus All Cards



⁸⁴ An even higher percentage of nonrewards cards have balances.

⁸⁵ A comparison of this sort for APRs strikes us as an interesting topic for further study. Although the analysis would be conceptually similar to that laid out above for annual fees and rewards, the exercise is much more difficult to execute given that interest rates and credit risk vary considerably over time.

FIGURE 5

Cards with Balances: Rewards Cards versus All Cards

3. Hypothesis 3—Revolvers will not substitute away from credit cards if given a new pay-now payment type.

This hypothesis flows from the triumph-of-hope-over-experience aspect of the hyperbolic discounting story. If people really do not expect to end up in debt when they use their credit cards, then there is no reason to expect them to substitute away from credit cards that typically offer a thirty-day float period in addition to other benefits to a new pay-now payment method that offers some of the benefits of credit cards, such as universal acceptance and no (or negative) marginal cost, without incurring debt, but requires immediate payment.

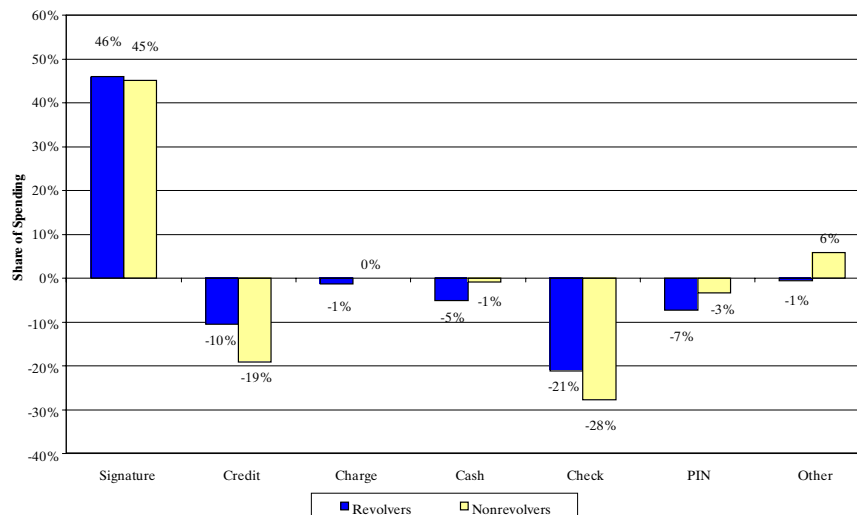
To test this hypothesis, we used the PSPS data to see how consumers, both revolvers and nonrevolvers, reacted when given access to a new payment form—the general purpose debit card.⁸⁶ Although the concept of the general purpose debit card has been around for thirty years, the cards were a niche product until the mid-1990s, when issuance dramatically increased to include most checking account holders. Because the PSPS has, since 1994, asked consumers whether they have a general purpose debit card, we were able to test how acquisition of such a card affected consumer spending habits.

⁸⁶ Specifically, we examined the case where participants acquired a debit card with both signature and PIN debit functionality.

Here again, our results fail to support the hyperbolic discounting theory. We found that 62 percent of revolvers who acquired a general purpose debit card actually used that card. Revolvers who acquired and used a general purpose debit card did, in fact, shift spending to their new cards away from their credit cards. The rate of shift increased with usage. That is, revolvers who became high frequency debit card users shifted more spending away from credit cards than revolvers who used the debit card less frequently.⁸⁷ Fewer nonrevolvers (37 percent) who acquired a general purpose debit card used the card. But nonrevolvers who became high frequency debit card users actually moved a greater percentage of their credit spending to debit cards than revolvers (see Figure 6).

FIGURE 6

**Changes in Shares of Spending by Payment Type
after Acquiring a General Purpose Debit Card
(High Frequency Debit Users)**



CONCLUSION

The above results do not support the hypothesis that consumer decisionmaking with respect to credit cards is affected by the phenomenon of hyperbolic discounting. On the supply side, we found that interest rates do indeed fluctuate over time, while on the demand side,

⁸⁷ Revolvers were classified as high, medium high, medium low, and low frequency debit users by identifying quartiles based on debit card usage. Revolvers who were high frequency debit users used a general purpose debit card for 46 percent of their spending on average.

we found no evidence that consumers carrying credit card debt had acquired this debt as a result of carrying credit cards with appealing short-term features. In fact, consumers without credit card debt more frequently carried cards with these features. Finally, we found that the ability to consume now and pay later was not attractive enough to prevent some consumers with credit card debt from shifting credit card spending to a pay-now device, namely a general purpose debit card, when they acquired such a card.

Although the hyperbolic discounting hypothesis did not fare so well in explaining consumer behavior with respect to credit cards, our results do tend to support predictions of the rational choice model of traditional economics. For example, applying basic notions of competition to the credit card industry of several thousand competitors and few apparent barriers to entry, traditional economics would lead us to expect that interest rates would not remain stable over time but would fluctuate in relation to the opportunity cost of capital, just as we found above. In addition, to the extent that people make stable decisions over time, traditional economics would expect consumers who have larger revolving balances to seek out cards that feature lower interest rates.⁸⁸ Moreover, traditional economics would expect more revolvers than nonrevolvers to carry cards with annual fees because the annual fee is the only regular cost of the cards for nonrevolvers.⁸⁹ Finally, because rewards cards typically feature higher interest rates and revolvers prefer lower interest rates, traditional economics would expect that fewer revolvers would carry these cards compared to nonrevolvers.

Our last result—that consumers shift spending from credit cards to signature debit cards—appears, at first blush, harder to explain with traditional economics, especially under the “short form” rational choice model. In particular, this model does not account for a consumer who does not carry credit card balances substituting more credit spending to debit than his balance-carrying counterpart. A *homo economicus* with enough credit to cover actual and expected expenses should not use a debit card instead of a credit card given the thirty-day interest free float period typically available on credit cards but not debit cards.⁹⁰

⁸⁸ See Zywicki, 3 Chap L Rev at 106 (cited in note 63).

⁸⁹ See Evans and Schmalensee, *Paying with Plastic* at 223–24 (cited in note 2).

⁹⁰ There are, of course, other differences between some types of general purpose debit cards and credit cards. For example, debit card transactions are always automatically deducted from the associated demand deposit account. Credit card balances, at least traditionally, have to be paid with a separate check but certain credit card issuers will allow consumers to pay all or a portion of their bills automatically by sweeping a linked demand deposit or other asset account (for example, the Merrill Lynch card).

There is, however, a model that does offer a potential explanation for such behavior—the second order rational choice model.⁹¹ In this model, consumers learn about their behavioral weaknesses and contract with more highly skilled parties to overcome these weaknesses. Such a model would explain why a consumer concerned about acquiring unwanted debt would use a pay-now device such as a debit card when given the opportunity. Of course, this is simply one possibility. In the end people may not behave, strictly speaking, in the way that economists must model behavior in order to reduce it to a string of mathematical variables and operations. Indeed, as Richard Epstein has observed, the formal economic model of human behavior “sets a very high bar indeed.”⁹²

Our analysis does not conclusively answer the questions posed at the outset of this Essay—whether consumers are capable of using credit wisely and whether the increased availability of consumer credit has made all consumers better off. Such an effort would take far more space than this format permits. But even if credit cards have made some consumers worse off, the payment and credit revolutions that credit cards have helped to spark certainly seem to have contributed to the welfare of society as a whole. If nothing else, as with the cell phone, the PC, and the Internet (all of which have their downsides), it is hard to imagine life without the credit card.

We have shown, however, that certain critics leap too quickly to the conclusion that credit cards are harmful and that their availability should therefore be constrained.⁹³ The supply and demand characteristics of this industry, as depicted by our data, do not follow the pattern predicted by the phenomenon of hyperbolic discounting upon which certain arguments about the harmfulness of credit cards are based. In fact, the hyperbolic discounting narrative failed to line up with any of our results. Existing work in this area, although interesting, does not provide a sufficient basis for overturning long established legal or social policy.

⁹¹ See, for example, Richard A. Epstein, *Second Order Rationality: What Both Rational Choice Theory and Behavioral Economics Overlook* 6 (unpublished manuscript 2005) (on file with author) (defining second-order rationality as an individual decisionmaker’s ability to account for cognitive shortcomings that may negatively affect a decision).

⁹² *Id.* at 2.

⁹³ See Loewenstein and O’Donoghue, 73 U Chi L Rev at 191–92 (cited in note 5) (advocating supply-side restrictions on credit); Bar-Gill, 98 Nw U L Rev at 1411 (cited in note 5) (“The long-term costs to consumers [of credit cards] will generally outweigh the short-term benefits.”).