PAYMENT CARD REGULATION AND THE (MIS)APPLICATION OF THE ECONOMICS OF TWO-SIDED MARKETS

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I. INTRODUCTION

Plastic payment cards are one of the great innovations of the twentieth century. Like the microchip, the personal computer, and the cellular telephone, payment cards have become ubiquitous after only a few decades of use, transforming the way business is conducted.

The simplicity of pulling a card from one's wallet belies the extraordinarily complex technological infrastructure that supports payment card transactions, connecting merchants,

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consumers, and financial institutions seamlessly, efficiently, and securely. This system benefits consumers and merchants alike—consumers enjoy convenience, speed, security, and accurate recordkeeping for their cards, while merchants benefit from the reliability of guaranteed payments, faster throughput at the point of sale, and access to tens of millions of customers who prefer to pay with plastic. Billions of dollars have been invested to produce the innovations necessary to make today's system function. Crucially, the enormous benefits of payment cards have developed through market competition, largely free from micromanagement by government regulators.

Yet payment card companies are increasingly under attack. In the United States, the industry has become an attractive target for the plaintiffs' bar.[1] Merchants throughout the world recognize the benefits of plastic, but have turned to lawsuits and regulators to reduce the associated costs. Australia and other governments have actually imposed controls on the price that some card issuers can charge merchants.

This article considers actions against payment card companies in light of the economics of two-sided markets. One side of the payment card market consists of the consumer and the card issuer, and the other consists of the acquirer (or an intermediary) and the merchant. For the system to function, consumers must carry cards and merchants must accept them. Neither side can be considered in isolation; rather, understanding the interrelation between the two is crucial. This two-sided feature dramatically expands the challenge for those attempting to formulate sensible regulations. Because participants on each side of the card transaction simultaneously generate costs and benefits for one another, pricing according to marginal costs and other traditional measures of market efficiency has little relevance. Unfortunately, most legal interventions in the

[1] *See, e.g.*, Kendall v. Visa U.S.A, Inc., 2005 U.S. Dist. LEXIS 21450 (N.D. Cal. July 25, 2005) (motion to dismiss granted).

payment card industry to date have ignored the dynamics of this two-sided market.

Section II of this article briefly summarizes the relevant economic literature regarding two-sided markets. Section III provides an overview of the payment card industry, and Section IV discusses the many benefits of payment cards. Section V then considers one recent example of government intervention: Australia's regulation of the fees that certain card issuers charge for their services. Section VI offers concluding remarks.

II. THE ECONOMICS OF TWO-SIDED MARKETS

Two-sided markets are common in today's economy.[2] Newspapers, for example, link readers and advertisers and thus provide one example of a two-sided market. A newspaper without readers will not attract advertisers, and increasing the price of a newspaper to compensate for the absence of revenue from advertisers will turn away readers.

Three conditions must be present in a two-sided market: (1) two distinct groups of customers; (2) the value obtained by one group increases with the size of the other; and (3) an intermediary connects the two. Coordination of two-sided markets requires that this intermediary or "middleman"

[2] The literature on the economics of the payment card industry is voluminous. Many of the leading papers have been collected in two volumes of *The Payment Card Economics Review*. *See Two-Sided Markets and Interchange Fees*, 1 PAYMENT CARD ECON. REV. (2003) and *The Industry and Its Legal Challenges*, 2 PAYMENT CARD ECON. REV. (2004) and sources cited therein. *See also* DAVID S. EVANS & RICHARD SCHMALENSEE, PAYING WITH PLASTIC: THE DIGITAL REVOLUTION IN BUYING AND BORROWING 133 (2d ed. 2005); Benjamin Klein et al., *Competition in Two-Sided Markets: The Antitrust Economics of Payment Card Interchange Fees*, ANTITRUST L.J. (forthcoming 2005) (manuscript on file with authors); Jean-Charles Rochet & Jean Tirole, *Cooperation Among Competitors: Some Economics of Payment Card Associations*, 33 RAND J. ECON. 549 (2002) [hereinafter Rochet & Tirole, *Cooperation Among Competitors*]; Jean-Charles Rochet & Jean Tirole, *Platform Competition in Two-Sided Markets*, 1 J. EUR. ECON. ASS'N 990 (2003); Todd J. Zywicki, *The Economics of Credit Cards*, 3 CHAP. L. REV. 79 (2000) [hereinafter Zywicki, *Economics of Credit Cards*].

create a platform for the groups to interact. The intermediary must ensure the existence of a critical mass on both sides. Which side of the market exists first is not crucial; what does matter is that "the product may not exist at all if the business does not get the price structure right."[3]

Coordinating the two sides can result in behavior that appears irrational when examined in isolation. For instance, one might argue that the price that readers pay for newspapers is too low because it fails to cover the cost of production. Indeed, some newspapers are provided free to readers, with revenues obtained solely from advertisers. The newspaper thus "subsidizes" readers to increase circulation, thereby making it more attractive to advertise in the newspaper, and increasing the demand for, and price of, newspaper advertising. Seeking to eliminate the "subsidy" to readers while ignoring the advertiser side of the market is not only incorrect, but it would harm all parties—readers, advertisers, and newspaper producers alike.

Such "subsidies" are commonly used to solve the "chicken and egg" problem of coordinating the two sides of the market.[4] These "subsidies" might be deemed inefficient because some users pay less than the product's full marginal cost. But this naïve analysis is incorrect—the relevant measure is the *joint* surplus obtained by coordinating the activities of the two groups, e.g., advertisers and readers. Increased readership raises the value of advertising in the newspaper, while increased advertising raises the value of the newspaper to each reader by reducing his search costs for information, and by increasing the likelihood that he will

[3] EVANS & SCHMALENSEE, *supra* note 2, at 4. The industries characterized by "network effects" are commonly two-sided markets because it is often the two-sided nature of a product that creates the network effects. Classic network industries, such as telephones and fax machines, require both parties to the transaction to use the product for it to have value to either.

[4] Other two-sided markets utilizing subsidies include dating clubs, shopping malls, real estate, television, software, the yellow pages, and many more. *See* EVANS & SCHMALENSEE, *supra* note 2, at 133-58.

find information he desires. Thus, advertisers and readers both benefit from the purported subsidy.

Although the marginal costs of supplying each side are relevant in pricing decisions, they are not dispositive. Two other variables are crucial in determining which side of a market "subsidizes" the other: the relative demand elasticities of the participants on each side and the relative importance of network effects.[5] First, in a two-sided market, the side with less elastic demand will typically face the higher price, because raising the price for those with more elastic demand will lead to more lost sales. Consider newspapers again—local advertisers have relatively few outlets for informing consumers.[6] By contrast, consumers have many other sources of news, including radio, television, and the Internet. Thus, at the margin, readers will be more likely to respond to changes in subscription prices than advertisers to changes in advertising rates. Second, firms selling in two-sided markets will tend to charge a lower price to the group with greater network effects, i.e., where increased demand has a larger effect on value on the other side of the market. With newspapers, the network effects of increased readership on the value of advertising are generally much greater than the effects of increased advertising on the value of the paper to readers.[7]

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[5] "[Specifically,] if a supplier wishes to increase price, it will be more profitable to do so on the side of the market where the demand response is likely to be less and where network effects are less important." Klein et al., *supra* note 2, at 16. The intensity of competition on each side may also be relevant. *Id.* at 17 n.31.

[6] In relation to newspapers, television and radio are usually much more expensive forms of advertising for the benefit that local advertisers derive.

[7] Klein et al., *supra* note 2, at 15 (arguing that relative network effects is the most important reason for low subscription prices). Klein et al. argue that these factors explain why the Adobe reader is distributed free, while the writer is not. Readers are likely to be more price-sensitive than writers because of the larger heterogeneity among readers. Many readers will use the software only occasionally and will value it little. By contrast, there are very large network effects to writers, in that there is great value in being able to reach everyone, including these low value

Because of these dynamics, there is no reason why the price charged to the two sides in a two-sided market should, or would, equal marginal cost. The price charged to newspaper readers need not reflect the marginal cost of producing the paper. The concept of a "subsidy" or below-cost pricing makes no sense in this context given that each side of the market simultaneously creates benefits for the other side.

III. PAYMENT CARDS AS A TWO-SIDED MARKET

Payment cards, through their coordination of merchants and consumers, are another example of a two-sided market. Consumers will carry payment cards only if merchants accept them, and merchants will accept cards only if a sufficient number of consumers use them.

The United States has four major "brands" of payment cards—American Express, Discover, MasterCard, and Visa. These four are card systems that connect networks of businesses and merchants who process transactions, transfer funds, and provide billing information. American Express and Discover are integrated, proprietary systems that provide all of the financial services linking consumers to merchants that are necessary to effectuate payment transactions. Visa and MasterCard, by contrast, are joint ventures of the thousands of banks that issue their credit cards to consumers. The Visa and MasterCard systems provide the structure to clear transactions and coordinate billing information between consumers and merchants.

Within MasterCard and Visa, "issuers" provide cards to consumers, while "acquirers" process payment card transactions for merchants.[8] When a consumer uses a card, the merchant transfers the billing information to its acquirer, which then transfers the billing request to the bank issuer. The issuer then pays the acquirer, minus an amount called the "interchange fee," which is set by MasterCard and

users. "[M]any readers increase the value of writer software more than lots of writers increase the value of reader software." *Id.* at 17.

[8] *Id.* at 6-7.

Visa, and posts the charge to the consumer's account. The acquirer then credits the amount charged to the merchant's account, less another fee for its services. The total difference between the amount that the consumer pays and the amount the merchant receives is called the "merchant discount." The average merchant discount on a Visa or MasterCard credit transaction is approximately 2.0% of the purchase price. The acquirer receives approximately 0.6% of the purchase price, and the issuer receives the remaining 1.4% in the form of an interchange fee.[9]

The interchange fee is the source of considerable academic and regulatory interest, as will be discussed below. MasterCard and Visa use the fee to attract issuing banks. Because competition between the issuers is so intense,[10] the issuers use the fee to provide benefits to consumers, including rebating some of it directly to the cardholder through a cash refund or providing additional benefits to cardholders, such as 24-hour customer service, car rental insurance, and ancillary benefits like frequent flyer miles or affinity card programs with nonprofit organizations.

Because American Express and Discover are unitary systems rather than joint ventures, they combine the functions of issuer and acquirer and thus capture the entire merchant discount directly. American Express charges a relatively high merchant discount rate, averaging 2.7%, whereas Discover charges a relatively low rate, averaging 1.5%.[11]

Payment cards thus simultaneously benefit two groups—consumers who use cards to pay for purchases and merchants who use cards to receive payment for their sales. The demands of the two groups are interdependent in that one values the product only if the other does as well. As

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[9] *See* United States v. Visa, 344 F.3d 229, 235 (2d Cir. 2003).

[10] In 2002, the ten largest bank issuers of credit cards captured about 75% of the market. The top twenty-five issuers controlled about 85% of the market. EVANS & SCHMALENSEE, *supra* note 2, at 173. American Express and Discover raise the percentage controlled by the top ten to 78% of total charge volume. *Id.* at 214.

[11] *See id.* at 236.

discussed above, in two-sided markets the side with less elastic demand and lower network effects will generally "subsidize" the other side. With payment cards, merchants would be expected to pay more than consumers.[12] Although network effects are clearly present, the effects do not appear to be greater in one direction than the other—consumers and merchants both benefit substantially from payment cards. On the other hand, cardholder demand for a particular system's card is likely to be more price-sensitive than merchant demand, leading to merchant fees that are higher than cardholder fees. Cardholders are more price-sensitive because many consumers have multiple payment methods, including alternative payment cards. Most merchants, by contrast, cannot accept just one major card because they are likely to lose profitable incremental sales if they do not take the major payment cards.[13] Because most consumers do not carry *all* of the major payment cards, refusing to accept a major card may cost the merchant substantial sales.[14]

Credit card issuers have three streams of revenue. First, the acquirer pays the interchange fee whenever consumers use the issuer's card. (American Express and Discover receive the entire merchant discount.) Second, issuers gain revenues from consumers who revolve balances from one month to the next. These revenues consist primarily of interest paid on the balance, but also include penalties and charges, such as late fees and finance charges. Third, some issuers assess an annual fee for their cards.

Different issuers capture different shares of these revenues. American Express earns most of its revenues (approximately 82%) from its high merchant discount.[15] Visa and MasterCard issuers, by contrast, receive substantial revenue from consumers via revolving debt, as well as

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[12] *See* Klein et al., *supra* note 2, at 18.

[13] *Id.* at 5.

[14] Klein et al. estimate that it would not be profitable for a merchant to drop Visa if the merchant lost just one in five of the sales that it otherwise would have made. *Id.* at 21.

[15] David S. Evans, *It Takes Two to Tango: The Economics of Two-Sided Markets*, 1 PAYMENT CARD ECON. REV. 3, 4 (2003).

through other charges and late fees. Issuers of these cards earn only 15% of their revenue from interchange fees, with 70% of their revenue derived from finance charges, 12% from penalty and cash advance fees, and 3% from annual fees.[16]

These different price structures reflect, in part, different groups of cardholders. American Express receives higher merchant discounts because its cardholders are financially attractive—especially corporate card users and wealthy individuals. Moreover, corporate card accounts will not revolve, regardless of whether the corporate account is a charge or credit card. Thus, American Express, with a high corporate card user base, relies more heavily on revenue streams from merchant discounts and annual fees than on interest and penalties.

IV. THE BENEFITS OF PAYMENT CARDS

Payment card ownership grew dramatically at the end of the twentieth century. From 1970 to 1986, the proportion of families owning a general purpose bank card rose from 16% to 55%,[17] and by 2001, 73% owned a card.[18] Most of these consumers own more than one card; in 2003, the average cardholder held four or five cards.[19] Among households that own cards, 66% have more than one, accounting for almost 80% of credit card transaction volume.[20] These consumers can thus switch easily among different payment cards, depending on their relative costs and benefits. In addition, most consumers own a bank ATM card that can be used for debit transactions. This phenomenon, called "multihoming," refers to retaining access to several different networks simultaneously. Multihoming increases competition and

[16] Telephone Interview with Visa officials (April 20, 2005).

[17] *See* FED. RESERVE BD., THE PROFITABILITY OF CREDIT CARD OPERATIONS OF DEPOSITORY INSTITUTIONS 5 (1999), *available at* http://www.federalreserve.gov/boarddocs/rptcongress/creditcard/1999/default.htm.

[18] EVANS & SCHMALENSEE, *supra* note 2, at 95.

[19] *See* FED. RESERVE BD., *supra* note 17, at 4 (the precise average was 4.7).

[20] EVANS & SCHMALENSEE, *supra* note 2, at 232.

consumer choice by permitting easy switching among networks.[21]

A. Benefits to Consumers

The dramatic growth of payment cards reflects their attractiveness to consumers over other forms of payment and credit. Payment cards offer consumers numerous benefits, including better management of one's expenses, improved recordkeeping, greater shopping convenience, reduction of the risk of theft, float for those who do not revolve balances, rewards from use of cards that are available for additional purchases, and, especially for debit cards, convenience in obtaining cash. I first discuss these benefits and then consider the benefits of payment cards when used to obtain credit.

1. General Benefits

Payment cards allow consumers to manage their money better by making it possible to anticipate, plan, and match their obligations to their available funds.[22] Most households receive income in regular increments, biweekly or monthly paychecks, for instance, yet make purchases on an ongoing basis. Thus, consumers benefit from combining their bills into a monthly payment card obligation rather than constantly holding sufficient funds in their wallets or checking accounts. Similarly, payment cards allow consumers to smooth out unexpected expenditures, such as car repairs or family emergencies. Again, the alternative would be for households to maintain sufficient reserves to cover such costs. Some commentators have estimated that the benefit to consumers of reducing precautionary balances (and thereby earning interest on their money) is substantial,

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[21] *See generally* Rochet & Tirole, *Cooperation Among Competitors*, *supra* note 2.

[22] EVANS & SCHMALENSEE, *supra* note 2, at 91. Households with payment cards maintain lower balances in their checking accounts than households without payment cards. *Id.* at 92-93.

one that alone exceeds the cost of the annual fee on those cards that have them.[23]

Payment cards also reduce the costs of recordkeeping versus retaining individual receipts. Checks also offer this advantage, but payment cards do not require the additional inconvenience of recording in, and then rebalancing, a checkbook. Payment cards also create written records for the merchant, which can aid the processing of product returns and refunds.

Moreover, payment cards can reduce the time and transaction costs associated with shopping. Advances in technology have dramatically increased the speed of processing card transactions, which are now substantially faster than writing checks.[24] Although it is unclear whether paying with cards or cash is faster, using cash requires the consumer to obtain it in the first place. This in turn requires a trip to a bank or an ATM, either of which requires planning to make the trip and can be time consuming. Moreover, if the ATM is outside of the consumer's network the consumer must pay a fee to withdraw the money. By contrast, transactional users of payment cards pay nothing to use their card. Transaction errors, such as receiving too little or too much change, are also probably higher with cash than with electronic payment card transactions. Moreover, once withdrawn, cash on hand is held interest free, thereby costing the consumer this foregone interest income.

Yet another advantage of payment cards is that payment cards can be used in a wide variety of outlets, helping both consumers and merchants. Some car rental transactions require payment cards. Perhaps the most important development related to payment cards has been internet commerce, which relies on electronic payments. Not only do cards provide convenient payment, but they also assist in ancillary functions such as age verification, when appropriate. During 2002, Americans bought $43 billion

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[23] *See id.* at 91-93.

[24] *Id.* at 93 (estimating that payments take seventeen seconds using cards and seventy-three seconds using checks).

worth of retail goods over the Internet, comprising 1.3% of all retail sales.[25] By 2004, this figure had grown to over $100 billion.[26] In the United States, 95% of internet purchases are made with payment cards.[27] The development of e-commerce would have been stifled without consumer confidence in the security and usefulness of payment cards. By increasing shopping convenience and permitting greater e-commerce, the widespread use of payment cards has helped enable the creation and expansion of new businesses in the economy, especially small and niche-focused firms that could not survive in traditional brick-and-mortar markets.

Cash has a much higher risk of theft than payment cards. Empirical evidence indicates that people carry less cash in high crime areas.[28] When individuals carry less cash, they must visit an ATM more often. Moreover, out of pocket liability is limited by law for credit cards.[29] Payment cards also offer "float" to consumers during the period of time between the purchase and the card payment date. Payment on a credit card transaction is not due until the end of the billing period, and even then a grace period for payment of the bill continues. During this time consumers can invest their money in interest-bearing or revenue-producing assets, rather than in low-, or no-interest, checking accounts.[30] The

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[25] *Id.* at 305.

[26] *See* ZDNET Research, *Online Retail Volume Will Reach $100 Bln in 2004*, Feb. 20, 2004, http://www.itfacts.biz/index.php?id=P766.

[27] EVANS & SCHMALENSEE, *supra* note 2, at 84.

[28] David B. Humphrey et al., *Cash, Paper, and Electronic Payments: A Cross-Country Analysis*, 28 J. MONEY, CREDIT & BANKING 914, 934 (1996).

[29] Although payment cards offer limited liability in the case of theft or loss, they do pose other security concerns, such as the risk of identify theft.

[30] One recent paper estimated the value of float to be roughly eight to twelve times more valuable for credit and charge cards than for payment devices like debit cards that offer only a day or two of float, depending on the type of transaction and the size of the average purchase. On average, consumers have twenty-five days from the date of purchase to the date their card bill is due. Daniel D. Garcia Swartz et al., *The Economics of a Cashless Society: An Analysis of the Costs and Benefits of Payment Instruments* 52 (AEI-Brookings Joint Center for Regulatory Studies,

opportunity to earn rewards such as frequent flyer miles or a cash back bonus is yet another benefit of payment cards. Like float, rewards are an advantage of credit and charge cards over debit cards.

Among debit cards, PIN or online cards allow consumers to withdraw additional cash beyond the price of the purchase for which the card is used, thereby saving a trip to the ATM. Nevertheless, many consumers prefer signature or offline debit, as signature debit provides dispute resolution procedures, more extensive merchant acceptance (because signature debit runs on the same machine as credit cards, whereas PIN debit requires a new machine), and more familiar use (because they are patterned after credit cards).

2. Payment Cards as a Form of Credit

Many payment cards also provide revolving credit, and credit cards are now an important source of consumer credit. The growth in credit card credit appears to have resulted primarily from the substitution of cards for alternative, less attractive forms of credit. For instance, many consumers who cannot obtain unsecured credit through credit cards are instead forced to rely on pawn shops and payday lenders.[31] Credit cards have also replaced informal sources of short-term credit, such as borrowing from friends and family.[32]

Related Publication No. 04-24, 2004), *available at* http://www.aei-brookings.org/admin/authorpdfs/page.php?id=1048.

[31] *See* Zywicki, *Economics of Credit Cards*, *supra* note 2, at 96; Richard L. Peterson & Gregory A. Falls, *Impact of a Ten Percent Usury Ceiling: Empirical Evidence* 15-20 (Credit Research Ctr., Working Paper No. 40, 1981), *available at* http://www.msb.edu/faculty/research/credit_research/pdf/wp40.pdf; ROBERT W. JOHNSON & DIXIE P. JOHNSON, CREDIT RESEARCH CTR., PAWNBROKING IN THE U.S.: A PROFILE OF CUSTOMERS 47 (1998), http://www.msb.edu/faculty/research/credit_research/pdf/mono34.pdf (finding that those who borrow money from pawnbrokers do so because their alternative sources of borrowing were family, friends, or check cashers).

[32] Traditionally, this informal form of credit was the most common form. *See* LENDOL CALDER, FINANCING THE AMERICAN DREAM: A CULTURAL HISTORY OF CONSUMER CREDIT 60-64 (1999).

Although home equity loans or lines of credit offer lower interest rates than other types of consumer credit, those who borrow with credit cards, or otherwise rely heavily on unsecured credit, often do not own homes.[33]

Most prominently, credit cards have displaced personal finance companies and retail stores as sources of unsecured credit.[34] Unsecured personal finance loans are expensive, with much higher initiation fees than credit cards.[35] In addition, finance loans are usually made in set amounts with regular payment terms, and often limit the borrower's ability to prepay. Therefore, for both cost and convenience, credit cards are attractive for consumers. General purpose credit cards have also substantially displaced retail store credit.[36] Purchases of household durables and apparel were

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[33] *See* Todd J. Zywicki, *An Economic Analysis of the Consumer Bankruptcy Crisis* 99 NW. U. L. REV. 1463, 1492-99 (2005) [hereinafter Zywicki, *Bankruptcy Crisis*]; *see also* JOHNSON & JOHNSON, *supra* note 31, at 47 (finding that 65.4% of Americans own their homes, but only 34.8% of those who borrow from pawn shops do so).

[34] *See* Alan Greenspan, Chairman, Federal Reserve Board, Understanding Household Debt Obligations, Remarks Given at the Credit Union National Association 2004 Governmental Affairs Conference (Feb. 23, 2004), *available at* http://www.federalreserve.gov/boarddocs/speeches/2004/20040223/default.htm (noting that "the rise in credit card debt in the latter half of the 1990s is mirrored by a fall in unsecured personal loans"); Arthur B. Kennickell, A Rolling Tide: Changes in the Distribution of Wealth in the U.S., 1989-2001 17 (Federal Reserve Board, Survey of Consumer Finances Working Paper, Sept. 2003), *available at* http://www.federalreserve.gov/pubs/oss/oss2/papers/concentration.2001.10.pdf (noting that many lenders have stopped offering unsecured lines of credit).

[35] *See* Dagobert L. Brito & Peter R. Hartley, *Consumer Rationality and Credit Cards*, 103 J. POL. ECON. 400, 402 (1995). In addition, credit card applications are generally easier and more convenient than those for personal loans.

[36] *See* Thomas A. Durkin, *Credit Cards: Use and Consumer Attitudes, 1970-2000*, 86 FED. RES. BULL. 623, 623-24 (2000), *available at* http://www.federalreserve.gov/pubs/bulletin/200/0900lead.pdf (observing that credit cards "have largely replaced the installment-purchase plans that were important to the sales volume at many retail stores in earlier decades," especially for the purchase of appliances, furniture, and other durables).

traditionally made on credit, but credit cards now substitute for the in-house credit operations of retailers.[37]

Because of this substitution effect, most of the growth in credit card credit has not increased overall consumer debt. The use of revolving credit has risen, while consumer installment borrowing has fallen.[38]

B. Benefits to Merchants

Payment cards offer substantial benefits to merchants as well. Some of the benefits to consumers discussed above, such as speed of use and convenience, also aid merchants. Additionally, most acquirers offer useful and convenient billing operations that can reduce bookkeeping costs. Moreover, unlike bounced checks for which the merchant bears the risk, card issuers bear the risk of consumer nonpayment.[39] Compared to cash, payment cards also reduce the risk of employee errors and theft.

Most consumer credit was once tied to specific companies such as gasoline refineries and department stores. Singer Sewing Machine Company was the first large scale issuer of installment credit for consumer sales, beginning in 1850.[40] Oil company and hotel charge cards appeared relatively early as well, catering to businessmen who needed to transact while traveling.[41] Department stores issued credit to consumers, especially for appliances and other consumer durables. As early as 1930, almost as many purchases in department stores were made on "open book" revolving credit

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[37] EVANS & SCHMALENSEE, *supra* note 2, at 118.

[38] Zywicki, *Bankruptcy Crisis*, *supra* note 33; *see also* Wendy M. Edelberg & Jonas D. M. Fisher, *Household Debt*, 123 CHICAGO FED. LETTER 1, 3 (1997).

[39] Between 1992 and 2001, Visa issuers wrote off $114 billion (about three percent of total charges) as uncollectible. *See* EVANS & SCHMALENSEE, *supra* note 2, at 102.

[40] *See* James M. Ackerman, *Interest Rates and the Law: A History of Usury*, 1981 ARIZ. ST. L.J. 61, 95 (1981).

[41] *Id.*

as were made with cash.[42] Historically, only large companies and department stores could afford the administrative expense and risk of providing in-house consumer credit. Even if credit was not particularly profitable, businesses such as department stores used their credit cards to build customer loyalty, enhance customer convenience, and track customer purchase patterns. Thus, credit operations furthered the larger goal of promoting sales.

The development of universal bank cards has especially aided small and "boutique" businesses by separating credit from the retail transaction. Rather than being forced to maintain the fixed cost and risk of a full-blown consumer credit system, small retailers may now make sales on credit while shifting the risk and most of the fixed costs to third parties.[43] Moreover, given the obvious comparative advantage and specialization of banks and financial institutions in evaluating consumers' repayment capacity, banks and financial institutions almost certainly bear the nonpayment risk at a lesser cost than most retailers. Thus, the development of universal bank cards has especially helped smaller businesses and increased competition and consumer choice.

V. GOVERNMENT INTERVENTION IN THE PAYMENT CARD MARKET

This section discusses an important example of regulation in the payment card market. The purported need for regulation is based on the claim that interchange fees are "too high" and, as a result, subsidize consumers to overuse payment cards. But regulators' failure to recognize the two-sided nature of the payment card market has resulted in

[42] *See* LEWIS MANDELL, THE CREDIT CARD INDUSTRY: A HISTORY 17 (Twain Publishers 1990).

[43] Some fixed costs do remain with the retailer, such as the costs of purchasing one or more card readers, buying phone lines, and training staff. Most costs to merchants of accepting payment cards, however, are variable. EVANS & SCHMALENSEE, *supra* note 2, at 122.

flawed action. To help the reader understand the issues, I begin with some background on interchange fees.

A. The Origins and Role of Interchange Fees

Interchange fees arose from the structure of the Visa and MasterCard networks. Bank of America started a credit card business in 1958, but banking regulations prohibiting interstate banking prevented it from expanding beyond its home state of California.[44] Bank of America instead began to franchise its card brand in 1966, and initially required that acquirers pay issuers the entire merchant discount on a transaction. This procedure had obvious problems: it offered greater incentives to be an issuer than an acquirer, because the acquirer would receive no net revenues to cover its costs. Moreover, negotiations between the acquirers and the merchants set the discount rate, leading issuers to suspect that acquirers did not disclose and remit the full amount owed.

In 1970, Bank of America converted its franchise system into a member owned cooperative, which later changed its name to Visa. Since then, Visa has pursued an essentially open membership policy, growing to 21,000 member banks.[45] Facing the same restrictions on multistate banking, other banks formed MasterCard. Today, MasterCard comprises approximately over 25,000 issuers around the world.[46]

Soon after 1970, Visa adopted a fixed interchange fee, which was not linked to the merchant discount charged by individual acquirers. A uniform fee reduced the transaction costs of negotiating separate interchange fees between acquirers and issuers and eliminated the difficulties that

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[44] Howard H. Chang, *Interchange Fees in the Courts and Regulatory Authorities*, 1 PAYMENT CARD ECON. REV. 13, 17 (2003).

[45] Visa USA, http://www.usa.visa.com/about_visa/about_visa_usa/index.html?it=f|/index%2Ehtml|About%20Visa%20U.S.A. (last visited Oct. 25, 2005).

[46] MasterCard Company Fact Sheet, http://www.mastercard international.com/newsroom/company_fact.html (last visited Oct. 25, 2005).

issuers faced in monitoring the merchant discounts set by acquirers. Given the need for merchants to honor cards from each of the thousands of issuers, a systemwide fee also avoided the costs of the "hold up" problem created by individual issuers demanding higher interchange fees in any bilateral negotiation.[47]

Thus, the essential structure, comprising a merchant discount that provided revenues for the acquirer bank and included the interchange fee, was in place from almost the very beginning, long before Visa and MasterCard possibly had any market power. In fact, the early emergence of the interchange fee and its continued presence in the payment card industry testify to the inherent logic of interchange fees in equilibrating the two sides of the market. Indeed, both American Express and Discover use merchant discounts in the same manner as the cooperatives to solve the problem of simultaneously coordinating the two sides of the market.

In 1979, National Bancard Corporation sued Visa, claiming that setting the interchange fee fixed prices in violation of the antitrust laws.[48] Ruling for Visa, the Eleventh Circuit noted that there were two possible sources of revenue within the Visa system—cardholders and merchants—and that it was necessary to balance the two sides. "As a practical matter," the Court observed, "the card-issuing and merchant-signing members have a mutually dependent relationship . . . . In short, the cardholder cannot use his card unless the merchant accepts it and the merchant cannot accept the card unless the cardholder uses one."[49] The Court recognized the procompetitive role of interchange fees in coordinating the two sides and found that the competitive restraint was no broader than required.

As noted above, in two-sided markets, pricing incentives draw a critical mass of participants to one side of the market, which then calls forth supply on the other side. Unlike

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[47] *See* Klein et al., *supra* note 2, at 23-36.

[48] Nat'l Bancard Corp. v. Visa U.S.A., Inc., 779 F.2d 592 (11th Cir. 1986).

[49] *Id.* at 602.

suppliers to one-sided markets, who focus on maximizing output at a minimum cost, suppliers to two-sided markets must balance both sides. The Visa and MasterCard systems coordinate the consumer and merchant sides of the market, and the interchange fee balances demand on both sides. The higher the fee, the greater the incentive for issuers to expand consumer demand for credit cards through lower prices. Because of the extraordinary level of competition in the consumer market—including some 21,000 Visa and 25,000 MasterCard issuers—there is an overwhelming incentive for issuers to pass increases in their interchange fees on to consumers. Thus, higher interchange fees (and correspondingly higher merchant discounts) expand the number of consumers carrying and using a given card. By contrast, lower interchange fees and lower merchant discount rates reduce the costs to merchants of accepting the card; thus, lower discounts increase merchant willingness to accept the card.

In a seminal 1983 article, William Baxter discussed how both demand and supply must be generated jointly in a Visa or MasterCard transaction.[50] Both the purchaser and the merchant consume the payment card services, which issuing and acquiring banks supply together (although in the American Express and Discover systems, one party performs both functions). Yet, none of the parties will participate unless the individual benefit to each exceeds its individual marginal cost. If the overall transaction produces sufficient benefits to cover the total transaction costs, there are many possible ways that the costs and benefits can be distributed among the parties while still allowing the transaction to occur. Although one bank or the other may perform certain services for one party or the other, the party receiving the services need not directly compensate the bank providing them.

While both merchants and consumers must participate in any payment system, different systems adopt different

[50] *See* William F. Baxter, *Bank Interchange Fees of Transactional Paper: Legal and Economic Perspectives*, 26 J.L. & ECON. 541 (1983).

strategies to accomplish this goal. For instance, when Discover entered the market, it offered a low merchant discount to induce merchants to accept the card. On the consumer side of the market, Discover faced a less difficult problem. Because it grew out of the Sears financial network, Discover distributed its card with ease to many consumers. Thus, rather than the challenge of generating consumer use, Discover's challenge was to overcome the problem of merchant acceptance, which it achieved through a low merchant discount.

American Express has pursued a different strategy. The company has historically targeted high-end customers and merchants, especially through its corporate card. Initially, the attractiveness of its corporate card stemmed from the travel benefits and other services that American Express provided to its corporate clients. To fund these services, the company charged a high discount fee to merchants that were willing to pay to attract affluent and expense account customers, who are relatively insensitive to prices.[51] Thus, while Discover pursued a low discount strategy, American Express used a high discount. Although the details differed, both companies faced the same underlying problem—matching merchants with consumers.

The efforts of payment card systems to induce supermarket acceptance provides another illustration of the different strategies available to balance the two-sided market. To induce acceptance of their cards, American Express and Discover directly lowered their merchant discounts for supermarkets.[52] Similarly, Visa and MasterCard reduced the interchange fees charged to supermarkets, thereby reducing the merchant discount.[53]

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[51] Chang, *supra* note 44, at 16-17.

[52] Although many grocery chains do not accept American Express, it is the only card accepted at Costco.

[53] The overall level of the discount has fluctuated. Over the past two decades, average merchant discount rates on all cards fell from about 2.7% in 1982 to 2.0% in 1994, before rising to about 2.3% by 2001. EVANS & SCHMALENSEE, *supra* note 2, at 126. The increase in the late 1990s appears to have resulted from increased competition between Visa and

The proliferation of debit cards offers yet another example of the different strategies available to balance the two-sided market. So-called PIN debit systems originated in those banks that had large customer bases holding ATM cards. Because the systems already had cardholders, but not merchants, they charged a lower interchange fee. On the other hand, because MasterCard and Visa had a large merchant base but lacked debit card holders, they charged a higher interchange fee to induce issuers to seek card holders.[54]

B. The Attacks on Interchange Fees

Interchange fees have recently come under regulatory scrutiny. In 2000, the European Commission, acting on retailer complaints, preliminarily determined that Visa's fixed fee violated European laws against collective price setting.[55] Two years later the Commission determined that no feasible alternative to collectively determined fees existed, but nonetheless refused to allow Visa to set the fee alone. Instead, Visa agreed to lower its fee and conduct cost studies that the Commission would then review for conformity to cost-based benchmarks.[56] In 2002, the Reserve Bank of

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MasterCard for banks to dedicate themselves to one system or the other. *See* Klein et al., *supra* note 2, at 41-45. With higher interchange fees, credit cards with reward programs have increased dramatically. *Id.* at 45 n.87. The two integrated systems, American Express and Discover, charge the highest and lowest discount rates respectively, with the Visa and MasterCard systems in between.

[54] *See* Klein et al., *supra* note 2, at 49 n.93. Although the low interchange fees characteristic of PIN debit discouraged PIN issuer promotion, the PIN debit networks benefited from the interest in debit that Visa and MasterCard generated.

[55] Press Release, European Commission, Commission Plans to Clear Certain Visa Provisions, Challenges Others (Oct. 16, 2000), *available at* http://europa.eu.int/rapid/pressReleasesAction.do?reference=IP/00/1164&format=HTML&aged=1&language=EN&guiLanguage=en.

[56] Press Release, European Commission, Commission Exempts Multilateral Interchange Fees for Cross-Border Visa Card Payments (July 24, 2002), *available at* http://europa.eu.int/rapid/pressReleasesAction.do?

Australia ("RBA") determined that interchange fees were too high and decided that they should be based on certain costs, subject to governmental oversight.[57] The regulation became effective in October of 2003.

Critics argue that "high" interchange fees cause payment cards to be overused relative to less expensive payment devices.[58] As explained above, when interchange fees increase, issuers reduce the effective price charged to cardholders, whether through lower card fees or enhanced benefits or rewards. Because cards are now cheaper, more consumers will obtain them and those with cards will use them more.[59]

For merchants, a higher interchange fee increases the costs of accepting cards. If merchants are not willing or able to pass the higher charges directly on to customers using payment cards, or are unable to cease accepting cards, then critics contend that merchants will raise their overall prices with the resulting effect that consumers without cards will pay more without any corresponding benefits. As a result, the private incentives of card issuers and consumers to use payment cards are said to expand the level of card transactions beyond that which maximizes social welfare (in that cards externalize costs to merchants and other consumers). Ian J. Macfarlane, Governor of the Reserve Bank of Australia, recently referred to this phenomenon as Gresham's Law of Payments, because it can potentially lead to more expensive means of payment driving out less

reference=IP/02/1138&format=HTML&aged=0&language=EN&guiLanguage=en.

[57] RESERVE BANK OF AUSTRALIA, REFORM OF CREDIT CARD SCHEMES IN AUSTRALIA IV: FINAL REFORMS AND REGULATION IMPACT STATEMENT (Aug. 2002), *available at* http://www.rba.gov.au/PaymentsSystem/Reforms/CCSchemes/FinalReforms/Impact_analysis.pdf.

[58] *See, e.g.*, Alan S. Frankel, *Monopoly and Competition in the Supply and Exchange of Money*, 66 ANTITRUST L.J. 313 (1998).

[59] Given the benefits of card use that some issuers provide, the price to consumers may actually be negative.

expensive means.[60] In these circumstances it is alleged that competition may not prevent card companies from setting an inefficiently high interchange fee. The RBA used this analysis to determine that credit cards were overused and to impose cost-based price caps on interchange fees.

This approach appears flawed. First, as discussed above, in two-sided markets there is no reason why each participant should necessarily pay a price related to his marginal cost. Instead, the "correct" interchange fee should account for the differential demand elasticities of cardholders and merchants. In fact, as also explained above, different payment cards follow different pricing strategies, with some imposing higher costs on merchants than others. Second, the RBA ignored both the marginal benefits that payment cards provide to consumers and the full cost of using alternative payment systems. The relevant policy question is not simply how to minimize the direct costs of conducting transactions using various payment forms; rather, the crucial policy concern is how to maximize the amount by which society's total benefits exceed its total costs. By this standard, the RBA's analysis is seriously incomplete.

Payment cards offer substantial private and social benefits that must be considered to calculate overall efficiency accurately. For example, payment cards offer many benefits to consumers relative to the alternatives. A recent AEI/Brookings paper attempts to quantify the relative costs and benefits to all parties associated with different payment devices to estimate the social cost of each system once the offsetting benefits are deducted.[61] The authors calculate the costs and benefits to four different parties in

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[60] *See* I.J. Macfarlane, Governor, Reserve Bank of Australia, Gresham's Law of Payments, Address Before the AIBF Industry Forum (Mar. 23, 2005), *available at* http://www.rba.gov.au/Speeches/2005/sp_gov_230305.html. Even the economist that the RBA hired to study the issue, Michael Katz, observed that focusing only on the cost of various payment mechanisms ignores the demand-side considerations of consumers and merchants and is therefore inappropriate. *See* EVANS & SCHMALENSEE, *supra* note 2, at 290.

[61] *See* Garcia Swartz et al., *supra* note 30.

the system: merchants, consumers, the central bank, and commercial banks. They examine six different types of payment instruments: cash, non-verified check, verified check, credit/charge, signature debit, and PIN debit. In some cases, they also calculate the net marginal social cost for various card brands. Finally, they examine the relative costs and benefits in three different purchasing environments—grocery stores, discount stores, and electronics stores—for two sizes of purchase in each environment.

Any payment system has costs. One or both of the parties to the transaction—consumers and merchants—bear some of these costs directly. Third parties also have costs, such as the Federal Reserve's cost of printing money and replacing worn cash, and the costs to consumers who wait in line longer when those in front of them use slower payment methods. All social costs should be considered.

Cash, for instance, imposes costs on retailers and consumers that electronic payment systems do not. One example is the labor cost associated with counting cash and reconciling the cash register drawer. As labor costs increase, the cost of cash payments to retailers becomes more expensive relative to electronic payments. In addition, cash has a higher risk of theft and loss for both consumers and merchants (from employee malfeasance). The costs associated with collecting and transporting cash safely, most notably armored cars, do not exist for payment cards. Moreover, commercial banks generally charge a fee for processing deposits. Banks incur additional costs to maintain and restock ATMs; similarly, consumers bear the costs associated with finding, and traveling to, an ATM. Consumers can withdraw more money per visit, but increased withdrawals also increase the risk of loss from theft. Finally, if the consumer draws the money from an interest-bearing account, increasing the amount withdrawn will reduce the interest earned, and thus further deter larger cash withdrawals.

Unlike the cost of the merchant discount associated with payment cards, these costs of using cash are less obvious. Nonetheless, they exist and can be substantial. In practice

today, cash is used frequently only for relatively small transactions. For instance, in grocery stores the average size of a cash transaction is only $11.52, whereas the average size of a check transaction is $54.24.[62]

Checks also have many costs beyond those of the direct transaction between consumer and merchant. Consumers bear the cost of purchasing checks, which have to be printed. Banks pay the Federal Reserve to process and clear checks. Merchants bear the costs of bounced checks and collection costs; alternatively, merchants themselves will bear most of the costs of implementing more rigorous procedures to prevent bad checks, including the time required for closer inspection of identification.

Payment cards also have costs. Like currency, the magnetic strip on payment cards wears out with use. Banks levy a charge for processing payment card transactions, which becomes part of the merchant discount. Cards with reward schemes such as cash back or frequent flyer miles have processing costs. Merchants also bear the cost of credit card losses, i.e., chargebacks, for certain types of losses. Card issuers face the additional costs of providing "float" to consumers between the time a charge is made and the time that payment for it becomes due. For charge and credit cards, this period is 25 days; for signature debit it is two days.[63] Of course, float is a symmetrical benefit to consumers.

The various payment systems have benefits as well. For example, cash permits complete consumer privacy. Relative to cash, checks lead to better recordkeeping. The many benefits of payment cards, both to consumers and merchants, are discussed above.[64]

The AEI/Brookings paper, considering these relevant costs and benefits, estimates the net social costs of these different payment systems. It finds that contrary to conventional wisdom, payment cards generally, and

[62] *Id.* at 40-41.

[63] *See id.* at 44.

[64] *See supra* Section IV.

charge/credit cards specifically, are not substantially more expensive than more traditional payment forms. The paper provides separate estimates for each transaction studied. For grocery stores, the net social marginal cost (i.e., social cost minus social benefit) of a small transaction is approximately the same for cash, verified check, credit/charge card, or PIN debit, is slightly higher for non-verified check, and is slightly lower for signature debit.[65] For larger grocery purchases, credit/charge cards unambiguously have the lowest net social marginal cost, cash has the highest, and the others fall somewhere in between.[66]

A calculation of net social marginal cost for "small" purchases in discount stores revealed no substantial differences among the various forms of payment, with the lone exception of checks, which are substantially more expensive.[67] As transaction size increases, however, cash again becomes inferior.[68] For electronics store purchases, checks are slightly better than other forms of payment, and cash remains the worst. For the average cash purchase in electronics stores ($64.98), checks have the lowest net social marginal cost; credit and charge cards are estimated to be

[65] Garcia Swartz et al., *supra* note 30, at 51. The transaction size was $11.54, the average cash purchase size for grocery stores. These statistics measure the cost of replacing the average cash transaction with alternative payment methods. The estimated net social costs were: cash ($0.83); verified check ($0.87); credit/charge card ($0.84); PIN debit ($0.83); non-verified check ($0.99); and signature debit ($0.76).

[66] The transaction size for larger purchases was $54.24, which is the average purchase size for grocery stores when the purchase was paid by check. The statistics measure the cost of replacing the average check transaction with one of the alternative payment methods. The net marginal social cost of credit/charge cards was estimated as $0.74 and for cash at $1.79. *Id.* at 56.

[67] For the average cash transaction in discount stores ($15.49), checks are calculated to have a net social marginal cost of $0.96, charge and credit cards are $0.60-$0.61, PIN debit is $0.64, cash is $0.57, and signature debit is $0.52. *Id.* at 62.

[68] *Id.* at 63. For transactions of $43.93, the net social marginal cost for cash is calculated to be $1.55, for checks $1.06, for PIN debit $0.69, and for signature debit and all charge/credit cards $0.53-$0.55.

slightly higher, signature debit is somewhat higher, and cash is by far the most expensive.[69] If the average electronics store purchase is increased to $124.66, however, checks and credit/charge cards converge to roughly the same net social marginal cost ($0.61 for MasterCard and Visa, $0.68 for Discover and American Express, and $0.66 for checks). In this scenario, signature debit is calculated to cost $1.06 and cash $1.56.

Because debit cards have lower interchange fees than credit cards, the RBA prefers the former to the latter. Yet credit cards have benefits that debit cards lack, including float, rewards, and the credit option. (Debit cards do allow one to get cash back at the register, however, a feature that most credit cards lack.) In measuring net social cost, the AEI/Brookings study finds that debit is not superior to credit.[70]

Overall, once the full benefits and costs of payment mechanisms are estimated, credit and charge cards do not appear to be at a systematic disadvantage to alternative payment systems. Because this is the best data currently available, it provides additional evidence that the RBA's attack on interchange fees is misplaced. Primarily, capping the interchange fees appears to change the wealth

[69] *Id.* at 67. For the average cash purchase of $64.98, checks have a net social marginal cost of $0.64, credit and charge cards are $0.76-$0.79, signature debit is $0.95, and cash is $1.74. The authors hypothesize that the surprising standing of checks relative to other payment forms in electronics stores may be attributable to an anomaly in the data set. The authors base their study on non-venue-specific check processing costs, but utilize venue-specific data on bank processing revenues. The relatively high per check revenue at electronics stores thus reduces the net social costs for checks when compared against average (that is, non-venue-specific) check processing costs. The authors hypothesize that venue-specific check processing data may reveal that banks actually incur higher fraud and insufficient funds risks with electronics store transactions, and therefore, charge these merchants higher fees for check processing. Higher check processing fees would, or course, increase the net social marginal cost of check transactions relative to other forms of payment.

[70] *Id.* at 62.

distribution between cardholders and merchants, without a positive effect on allocative efficiency.

Moreover, the RBA regulation is arbitrary. The RBA caps the interchange fees charged by the cooperative systems (Visa and MasterCard), but not American Express.[71] As with the Visa and MasterCard networks, American Express uses the merchant discount to balance the two-sided payment card market. The only difference between integrated systems and cooperative joint ventures is not the substance of the transaction—the merchant discount performs the same function in both—but the form of the corporate structure used and the fee charged. If the problem is that payment card use is improperly subsidized through these fees, then that concern applies with equal force to American Express. In fact, American Express' merchant discount is substantially higher than its competitors'; under the RBA's logic, the market distortion created by excessive merchant discounts should not be less for American Express. Thus, the decision by the RBA to regulate interchange fees for Visa and MasterCard, but not American Express, appears inexplicable.[72]

C. The Impact of Suppressing Interchange Fees

Regulating interchange fees will have harmful effects. First, losing these revenues will force card issuers to decrease their costs, either by reducing card benefits or increasing the revenues that they receive directly from consumers (e.g., through higher annual fees, finance charges, and penalty fees). Evans and Schmalensee illustrate the tradeoff between interchange fees and other issuer revenue streams as follows. In 1983, the Visa interchange fee was 1.6%, the average merchant discount rate was 2.3%, the average annual fee for cardholders was $16.86, and the charge volume per account was $1,720. If the interchange

[71] Discover does not operate in Australia.

[72] Garcia Swartz et al. find no systematic difference between Discover, American Express, Visa, and MasterCard in terms of net social cost. Garcia Swartz et al., *supra* note 30, at 62-63.

fee had been $0, then the merchant discount rate would have been 0.7% and the annual fee for cardholders would have had to almost triple to $44.38 to keep the average issuer's revenues constant.[73] Alternatively, issuers would have had to increase finance or other charges levied on consumers.

Of course, such dramatic increases would likely decrease card ownership, and especially multiple card ownership, which would thereby reduce competition in the payment card market. Given the presence of alternative payment methods, many consumers would avoid cards rather than pay more. As with price controls throughout history, this distortion would force issuers and consumers to make choices that they would have preferred to avoid.

Although the market is still adjusting to the regulatory change, the evidence from Australia thus far is consistent with the conclusion that the controls on interchange fees have harmed consumers directly and had a detrimental impact on competition.[74] If issuers receive less from merchants then they must receive more from consumers or reduce the benefits that consumers receive. In fact, issuers have increased annual and other fees.[75] Following the imposition of cost-based price caps on interchange fees, bank fee income from credit cards increased 30-35% in 2003, including a small increase in annual fees.[76] Issuers appear to have increased late payment fees and tightened their collection procedures. Banks have also reduced cardholder benefits. They have increased the spending levels required to obtain particular rewards and have capped the reward

[73] EVANS & SCHMALENSEE, *supra* note 2, at 156.

[74] RESERVE BANK OF AUSTRALIA PAYMENT SYS. BOARD, ANNUAL REPORT 11 (2004). The RBA also appeared to have failed in its goal of forcing consumers to face the marginal costs of credit card use. *See* Evans and Schmalensee, The Economics of Interchange Fees and Their Regulation: An Overview (AEI-Brookings Institute, Working Paper, 2005).

[75] *See* Howard H. Chang, David S. Evans, & Daniel D. Garcia Swartz, *An Assessment of the Reserve Bank of Australia's Interchange Fee Regulation* (forthcoming), *available at* http://www.newyorkfed.org/research/conference/2005/antitrust/chang_evans_garcia.pdf.

[76] *Id.* at 31-32.

points available in a year (e.g., by increasing the miles necessary for free airline tickets and capping the number of miles that can be accumulated).[77]

Because the rule applies only to the cooperative systems, the evidence also reveals that Visa and MasterCard have been disadvantaged relative to American Express. The RBA dramatically reduced the interchange fee for the cooperatives, from 0.95% of the transaction value down to 0.55% of the transaction value.[78] The merchant discount declined by a similar amount, from 1.41% to 0.99%. By contrast, the discount rate for the major integrated system, American Express, fell only to 2.37% from 2.5%. Moreover, although issuers reduced the benefits available to MasterCard and Visa cardholders, there is no evidence that cardholders of the integrated issuers have suffered similar cuts. In fact, American Express' market share has increased significantly.[79]

As experience in the United States suggests, an adjustment as seemingly simple as raising annual fees can have profound effects. During the 1970s and early 1980s, high inflation increasingly caused credit card interest rates to bump up against state-imposed usury ceilings. Faced with the inability to charge market interest rates, credit card issuers turned elsewhere for revenues.[80] In particular, credit card issuers began to impose annual fees to supplement interest income.[81] Following the imposition of annual fees,

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[77] RESERVE BANK OF AUSTRALIA, *supra* note 74, at 11.

[78] *See* Chang et al., *supra* note 75, at 1.

[79] *See* Klein et al., *supra* note 2, at 28-30 (American Express and Diner's Club shares increased from 14.6% to at least 16.5%). The corresponding decline in Visa and MasterCard shares when the interchange fee decreased is inconsistent with the argument that the higher interchange fee before regulation evidenced market power. *Id.* at 52-53.

[80] Issuers also adopted stricter lending policies and rationed credit more tightly. Glenn B. Canner & Charles A. Luckett, *Developments in the Pricing of Credit Card Services*, 78 FED. RES. BULL. 652, 654 (1992).

[81] *Id.*

however, consumers canceled over nine million credit cards, or roughly eight percent of the cards then outstanding.[82]

In 1978, the Supreme Court decided *Marquette National Bank v. Omaha Service Corp.*,[83] which fostered a dramatic increase in competition within the payment card industry. Prior to *Marquette*, interest rates on unsecured credit such as payment cards faced strict usury restrictions in many states, with the state in which the cardholder resided setting the rates. Strict usury laws had severe effects. First, when lenders could not achieve a market rate of return they rationed credit, especially to high risk borrowers. The evidence demonstrates that these restrictions reduced the amount of unsecured credit available to consumers.[84] Second, and more important for the interchange debate, annual fees on payment cards were introduced to compensate for revenue losses from the banks' inability to charge market interest rates, thereby circumventing interest rate ceilings.[85]

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[82] *Id.*

[83] 439 U.S. 299 (1978).

[84] *See* Christopher C. DeMuth, *The Case Against Credit Card Interest Rate Regulation*, 3 YALE J. ON REG. 201, 217 (1986); *see also* Donna Craig Vandenbrink, The Effects of Usury Ceilings: The Economic Evidence (Federal Reserve Bank of Chicago, Working Paper, 1982).

[85] *See* Canner & Luckett, *supra* note 80, at 654; DeMuth, *supra* note 85, at 218 ("For example, if interest rates on credit cards are set at below the cost of funds but annual fees are not controlled, issuers may raise their fees in an effort to meet their costs. If such pricing responses are feasible, price controls will be circumvented. Consumers will be worse off than before, however, since the new pricing system will be less efficient and hence more costly than the one it replaced."). Early efforts to impose annual fees on credit cards were constrained by the feared competitive harm to the first institution to do so. To fight inflation, President Carter imposed a ban on the solicitation of new accounts by credit card issuers in 1980. This stifling of competition provided an opportunity for banks to circumvent usury restrictions through annual fees, with reduced competitive harm. MANDELL, *supra* note 42, at 72. One effect of the annual fee was that convenience users subsidized revolvers. The annual fee was assessed equally against both types of users, even though its purpose was to offset losses from the inability to charge the market interest price to revolvers.

Marquette essentially deregulated interest rates on credit cards by holding that the bank's, and not the consumer's, home state would regulate applicable interest rates. In response, several states—notably South Dakota and Delaware—raised or abolished their interest rate ceilings, leading issuers to relocate to those states.[86] One result of the deregulation of interest rates and subsequent entry of new card issuers was the gradual elimination of annual fees on most cards as competition intensified.[87] Although credit card pricing remained relatively unchanged during much of the 1980s, eventually new entrants (mainly non-bank institutions such as AT&T, Sears, and General Motors) offered consumers lower interest rates, enhanced card features, and no annual fees.[88] Annual fee revenues declined rapidly,[89] and in their place issuers substituted new risk-based fees such as late fees, fees for exceeding one's credit limit, and cash advance fees.[90]

Moreover, the elimination of annual fees brought credit card pricing into line with consumer preferences. In a recent customer survey, "no annual fee" was the prime selection criterion for one-third of all consumers, more than any other feature.[91] More than thirty percent said that a low interest rate on purchases was their prime selection criterion.[92] Consumers appear to shop on the margins that best fit their needs. Transactional users want cards that are costless to carry and use, such as cards with no annual fee, or enhanced

[86] Between 1980 and 1985, fifteen states removed their ceilings, and many others raised theirs to levels that far surpassed those needed to cover costs. Canner & Luckett, *supra* note 80, at 654 n.4.

[87] *See* Zywicki, *Economics of Credit Cards*, *supra* note 2, at 118.

[88] Mark Furletti, *The Debate Over the National Bank Act and the Preemption of State Efforts to Regulate Credit Cards*, 77 TEMP. L. REV. 425, 444 (2004); Canner & Luckett, *supra* note 80, at 654.

[89] Furletti, *supra* note 88, at 444.

[90] Eliminating annual fees and replacing them with these alternative fees also eliminated many of the cross-subsidies that had previously been associated with annual fees. *Id.* at 444-45.

[91] EVANS & SCHMALENSEE, *supra* note 2, at 218.

[92] *Id.*

benefits such as 24-hour customer service, car rental insurance, or cash back on purchases. On the other hand, revolvers (or consumers who carry balances from month to month) are more interested in lower interest rates and presumably would accept some annual fee if necessary to receive a lower rate.

After the deregulation of interest rates, annual fees essentially disappeared for standard payment cards and have been retained only to defray the administrative costs for those cards offering ancillary benefits, such as frequent flyer miles.[93] Today, about eighty-five percent of bankcards have no annual fee.[94] Thus, the deregulation of interest rates allowed card issuers to respond to consumer preferences by eliminating annual fees.

Deregulating payment card terms had the additional and important benefit of increasing competition. Annual fees discourage consumers from carrying multiple payment cards because they increase the cost of owning additional cards, thereby helping commit consumers to a given card. Moreover, once paid, an annual fee discourages a consumer from switching mid-year and thereby paying another annual fee.[95]

The deregulation of the payment card market therefore had two predictable effects. First, it encouraged steady

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[93] *Id.*; Lawrence M. Ausubel, The Credit Card Market, Revisited (Univ. of Md., Dep't of Econ., Working Paper, July 20, 1995). A survey of top issuers found that by 1998 only 14% percent of customers who had not enrolled in a rewards program (such as a frequent flyer miles program) paid an annual fee, and by 2002, only 2% had done so. The average annual fee charged on non-rewards cards has fallen from $3.31 in 1998 to $0.50 in 2002. *See also* MARK FURLETTI, FEDERAL RESERVE BANK OF PHILADELPHIA, CREDIT CARD PRICING DEVELOPMENTS AND THEIR DISCLOSURE 9-10 (2003).

[94] EVANS & SCHMALENSEE, *supra* note 2, at 87.

[95] *See* Zywicki, *Economics of Credit Cards*, *supra* note 2, at 143 (describing annual fees as a "tax" on switching cards mid-year because the fees require forfeiture of the value of the first annual fee and payment of a second.)

growth in payment card ownership across all income levels.[96] Second, it stimulated a steady increase in the number of payment cards held by each household—many households have Visa, MasterCard, and Discover cards, and some have even more than one Visa or MasterCard from different issuers. That many consumers hold multiple cards is a direct effect of the elimination of annual fees. Competition and consumer choice have increased as consumers can choose their preferred card each time they shop.

Thus, the de facto elimination of usury restrictions and deregulation of credit card interest rates increased consumer welfare, reduced prices, increased the quality of cards through enhanced benefits, and perhaps most importantly, increased competition. By imposing price controls on interest rates, the prior regime led to inefficient repricing of credit terms, in part by creating the need for annual fees and forcing convenience users to subsidize revolvers.

This experience with usury regulations thus provides important lessons for recent proposals to regulate interchange fees. Most notably, it demonstrates the need to recognize that different streams of card revenues are interrelated and that the curtailment of one stream will generate responses, from the repricing of other credit terms to a reduction in card benefits. More fundamentally, price controls have an important impact on competition. Based on the U.S. usury experience, the imposition of annual fees to compensate for the inability to charge market interchange fees would be an especially damaging adjustment since annual fees would dampen the incentive for consumers to switch among cards and thereby reduce competition and its pro-consumer effects.

Of course, the reduction in interchange fees may benefit merchants and consumers who use other payment forms.[97]

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[96] *Id.* at 87-114. The poorest quintile has especially benefited. In 1970, 2% had credit cards; in 2001, 38% had credit cards and 43% had debit cards.

[97] As Klein et al. note, increased card usage has increased retail competition generally, which may have lowered overall price levels to the

No regulatory body in history has ever been able to assess confidently whether such gains more than offset the costs discussed in the preceding pages. The RBA itself does not purport to do so. Instead, its price controls rest on the inaccurate premise that credit cards are more expensive than other payment methods. Because that assumption is unsupported, this basis for the RBA's regulation fails.[98]

In summary, efforts to control interchange fees appear to be fundamentally misguided. Proposals for capping interchange fees fail to appreciate the complexities of regulating two-sided markets and the irrelevance of cost-based pricing in these markets. In seeking to force the internalization of an externality of dubious existence and questionable size, the RBA neglected to consider the full costs and benefits of payment card use, and thereby failed to appreciate the overall attractiveness of cards relative to other payment methods. Moreover, Australia drew an arbitrary and unsupportable distinction between interchange fees in the cooperative systems, Visa and MasterCard, and in the proprietary system, American Express. By regulating interchange fees, Australia has forced issuers to increase fees and reduce card benefits, all to the detriment of cardholders.

VI. CONCLUSION

Formulating sensible regulation is difficult under the best circumstances; regulating sensibly in ignorance of the

benefit of card users and non-card users alike. Klein et al., *supra* note 2, at 58 n.110.

[98] A further irony is that merchants, who pushed for the price caps, believe that cards have positive overall benefits. A survey of Australian retailers found that 62% of merchants believed that their customers generally spend more when using credit cards than they do when using cash or electronic funds transfer; only 28% thought otherwise. *See* Chang et al., *supra* note 75, at 1. Another empirical issue involves the regulation's effect on the intensity of card usage and the overall growth of card ownership. Preliminary analysis indicates that the regulation may have decreased intensity, but may not have slowed the growth of ownership. *Id.*

relevant economic theory and evidence is nearly impossible. With payment cards, the two-sided nature of the market dramatically increases the challenges faced by regulators. Because the participants on each side of the market simultaneously generate costs and benefits for one another, traditional notions of setting prices according to marginal cost and other measures of market efficiency are irrelevant. Rather, the need to synchronize the two sides of the market may require one side or the other to bear a greater share of the expense to ensure the market's existence and its efficient operation. Costs will generally be imposed on the party with fewer network effects or more inelastic demand.

Recognizing the two-sided nature of the payment card market can help to identify errors in recent regulatory decisions. Thus, Australia's cap on interchange fees will likely lead to increased prices for consumers for holding and using payment cards, which in turn will likely decrease competition and consumer choice in the payment card market. The best evidence available to date rejects the fundamental premise of the Australian rationale and finds that cards are not overused. Instead, payment cards provide enormous benefits. They should be allowed to grow and thrive, not stifled through misplaced theories, unsupported by relevant evidence, that encourage unnecessary regulatory experimentation.