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Card-Based Payment Systems in the United States and Japan

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CARD-BASED PAYMENT SYSTEMS IN THE UNITED STATES AND JAPAN

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Abstract

The use of credit cards and debit cards in Japan is quite different from the use in the United States. In general, Japanese consumers use credit cards for fewer transactions, of a larger average amount, with a smaller share of borrowing. Debit cards have been used rarely in Japan; the first major nationwide program did not start until 2000. This paper relies on about a dozen interviews with Japanese experts and executives to explore those differences. The paper generally concludes that the credit card has not succeeded in Japan as well as it has in the United States because of historical limits on bank issuance of cards, which have limited the ability of the industry to develop the product offerings that have been successful in the United States. As a result, the credit card has developed in use to be quite similar to the American debit card (with payments deducted automatically from a designated account each month). That development has left less market room for the debit card, explaining its late arrival in Japan. The final section of the paper explores which of those two systems is most likely to succeed as a general Internet payment system as Japan's internet commerce grows in the years to come.

Keywords: Credit cards, debit cards, internet payments, E-commerce

JEL classification code: K 29

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I. INTRODUCTION

Any moderately observant traveler to Japan cannot help but notice the most conspicuous distinction between the payment practices of Japanese and American consumers: the relative predilection of Japanese consumers to pay cash. That predilection is evidenced by data showing that the amount of outstanding currency in Japan (as a share of GDP) is more than twice what it is in the United States (11.6% versus 5.3%).[1] But that predilection did not inconvenience me significantly, because I experienced no difficulties in using my American credit card to make all the significant purchases that I made during my trip. At the time, it seemed to me that the Japanese system for card-based payments did not differ significantly from the American system.

But my first impression was wrong. The credit card and debit card that you find in the hands of Japanese consumers look much like the cards that you find in the hands of American consumers. But the systems that use the cards have developed quite differently. Most obviously, the credit card is used much less frequently than it is in the United States, and even when it is used the rate of borrowing by credit card is only a small fraction of what it is in the United States.[2] And the debit card – now a great success in the United States – is scarcely used at all; it was not introduced on a general basis until March 2000.[3]

It would be easy enough to attribute those different patterns of usage to different patterns of behavior. For example, it would be plausible to suggest that the

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[1] See Japanese Bankers Association, Payment Systems in Japan 2 (2000) (reporting that data and describing "the Japanese citizens' strong preference for using cash as a means of payment"); *see also id*. at 16 (discussing typical ATM policy permitting withdrawal of ¥2,000,000 per day, about 40 times the typical United States limit). The difference in the amount of cash in the hands of consumers might be even larger than that data suggests, because the share of the American currency supply held in other countries probably is greater than the share of Japanese currency supply held in other countries.

[2] *See infra* pp. 4-9.

[3] *See infra* pp. 33-35. A pilot stage of the now-operating J-Debit system began in January 1999. An earlier system called Bank-POS was introduced in 1984 and did not succeed. *See* Japanese Bankers Association, *supra* note 1, at 19.

relatively high Japanese savings rate carries with it a relative "distaste" for borrowing, that grows from each individual's exposure to Japanese culture.[4] It may be that the Japanese preference for cash payments has something to do with the structure of the industry as it now exists,[5] and it may even be that a distaste for borrowing has affected the industry. But even a glance at the industry suggests that several other objective institutional differences can go far to explain the current situation. Thus, in addition to the heavy use of cash payments, the situation is affected significantly by a history of relatively restricted banking powers, relatively high telecommunications costs, the somewhat smaller size of the Japanese economy, and (to bring things into the present) a relatively high incidence of mobile-phone internet transactions. The main goal of this paper is to see how those kinds of institutional factors can explain the structure of the card-based payment systems as they now exist in Japan.[6]

To a large extent, the paper relies on previously published data about the systems, particularly about the American system. I also rely, however, on information collected in interviews in both the United States and Japan. The interviews in the United States were conducted in 1999, primarily by telephone. The interviews in Japan were conducted during my visit to Tokyo in the fall of 2000. While in Japan, I spoke to a number of industry observers, leading academics, and three industry associations that promote the use of debit cards and electronic

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[4] *See infra* notes 44-46 and accompanying text.

[5] The Japanese preference for cash seems likely to be closely related to the general absence of the check as a consumer payment device in Japan. *See* Japanese Bankers Association, *supra* note 1, at 3 (reporting that checks are used for only 5% of Japanese non-cash payments, compared to 74% of such payments in the United States). More generally, this reflects Japan's status as a "giro" country rather than a "cheque" country. *See* Bank for International Settlements, Committee on Payment and Settlement Systems, *Retail Payments in Selected Countries: A Comparative Study* 10 (Sept. 1999), *available at* http://www.bis.org [hereinafter BIS, *Comparative Payments Study*] (characterizing Australia, Canada, France, the United Kingdom, and the United States as cheque countries and the continental EU and Japan as giro countries). The reasons that the check has not developed in Japan are obscure, and in any event beyond the scope of this project.

[6] *See* J. MARK RAMSEYER & MINORU NAKAZATO, JAPANESE LAW: AN ECONOMIC APPROACH xi-xiv (1999) (justifying a similar approach to Japanese law in general).

commerce. I also spoke to people active within the industry, including executives of a credit-sales company (shinpan kaisha), three bank-affiliated credit-card issuers, a consumer finance company, a large internet retailer, and a card-related technology company.[7]

The first part of the paper discusses credit cards. After describing how cards are used in the two countries and the relevant legal rules for transactions that use them, the first part of the paper discusses possible reasons for the limited use of credit on credit cards and also shows how that pattern of usage, together with other basic aspects of the Japanese institutional system, has contributed to a credit-card system that operates quite differently – but not less effectively – than the American system.

The second part of the paper discusses debit cards. The most distinctive feature of debit cards in Japan is that, at least for now, they are used much less frequently than they are in the United States. After discussing how the cards are used in the two countries and the relevant legal rules, that part explains the relatively late introduction of debit cards in Japan and assesses the effectiveness of that nascent system.

The third part of the paper looks ahead to electronic commerce and the future of card-based payment systems. Recognizing that any discussion of the topic is to some degree speculative, that part discusses the problems with how payments currently are made in Japanese internet commerce and compares the relative advantages of hardware- and software-based solutions to those problems.

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[7] I report information from the Tokyo interviews only on an anonymous basis because those interviews were conducted on an informal basis without recording or transcription.

II. CREDIT CARDS IN THE UNITED STATES AND JAPAN

A. USAGE IN THE UNITED STATES AND JAPAN

In the market for retail purchases in the United States, the credit card is a massive success: it was used in 1998 for 14 billion transactions worth almost $1.1 trillion dollars, about $76 per transaction.[8] Department of Commerce statistics indicate that in 1998 credit cards were used in about 17% of all transactions, for about 21% of the value paid in all American payment transactions.[9] For the most part, those transactions were conducted as revolving-credit transactions.[10] Under American practices, that means that the cardholder decides each month what share of the total account balance it will pay back; the cardholder is required to make only a tiny minimal payment, in an amount that often would not amortize the entire balance for several years.[11] In practice, somewhat more than half of American cardholders

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[8] *Credit & Debit Cards*, NILSON REP., Nov. 2000 (Issue 726) [hereinafter *1999 US Card Data*], at 1, 7. I rely throughout this paper on the *Nilson Report* for statistics regarding the American card industry. Although the source of the statistics published in the *Nilson Report* is rarely clear, I follow the lead of American government agencies and earlier academics, which generally have accepted them as authoritative.

[9] *See Payment Systems*, NILSON REP., Dec. 1999 (Issue 706) [hereinafter *1998 U.S. Payment Systems Data*], at 1, 6. The credit-card's share of retail purchase transactions doubtless is even higher, because the share that credit cards have for non-retail payment transactions surely is lower (close to zero) than the share that they have for retail payment transactions. Cash, by the way, was used in 44% of all U.S. payment transactions, but those transactions had an average amount of only $20.08, totaling less than 19% of the total dollar transaction volume. *See id.*

[10] In American terminology, the principal exception is a "payment card" like American Express, which requires full payment of the balance each month. In terms of transaction value at the merchant point of sale, American Express currently has about a 14% share of the American market. *See 1999 US Card Data*, *supra* note 8, at 1, 5. Even on American Express, however, the cardholder has the power to withhold payment by the simple expedient of neglecting to mail a check. That differs from the arrangements discussed below for Japan, in which the issuer receives funds on the payment date through a debit transfer from the cardholder's account. *See infra* notes 22-26 and accompanying text.

[11] The perception that those options are too lenient has motivated congressional efforts to require specific disclosures regarding the length of time repayment would take at the minimum payment rates. *See* Dean Anason, *LaFalce Sees Compromise as Reform's Best Hope*, AM. BANKER, Apr. 29, 1999, at 3, *available at* 1999 WL 6034812 (discussing possible disclosure requirements); Dean Anason, *Bankruptcy Bill Is Getting Last-Minute Tweaks*, AM. BANKER, Sept. 10, 1999, at 2 (same).

take advantage of that option to defer payment of some or all of their credit-card account balance each month.[12] The payments that they do make are made for the most part by writing a check and mailing it to the issuer.[13]

The contrast with Japan is considerable. First, Japanese consumers plainly do not use cards as frequently as American consumers: one recent study, for example, indicated that even excluding cash transactions (by all accounts the dominant method of point-of-sale payment in Japan),[14] credit cards accounted for only 10% of the value of payment transactions.[15] Industry statistics indicate only ¥20.76 trillion of credit-card transactions in 1999, about 7% of the ¥300 trillion yen of Japanese consumer spending that year.[16] That reflects purchases of about $1,500 per capita,

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[12] *See* Jeremy Simon, *More Users of Plastic Wielding It More Wisely*, ORANGE COUNTY REGISTER, Apr. 18, 1999, at K05, *available at* 1999 WL 4295534 (reporting an increase in "convenience users" from 29% in 1990 to 42% in 1997); Miriam Kreinin Souccar, *Mortgage Refinancing Slump Good for Card Firms*, AM. BANKER, Jan. 18, 2000, at 1, 15 (reporting MasterCard statistics indicating that only 54% of its customers retained balances in 1998, down from 57% in 1997); Mickey Meece, *Rise in Consumer Debt Burden Is an Illusion, MasterCard Says*, AM. BANKER, Mar. 18, 1997, at 14 (reporting industry studies indicating that 60% of credit-card users pay off their charges before interest accrues). A good way to understand the trend is to track the ratio of outstanding balances at any given time against the annual credit-card purchase volume. That figure was above 70% throughout the early 1990's, but fell to 68% in 1998. *See Bank Cards*, NILSON REP., Sept. 1999 (Issue 699), at 1, 6. Despite the slight fall, the figure reflects a use of credit that is an order of magnitude higher than the use of credit in Japanese card transactions.

[13] It is not customary for the customer to authorize the issuer in advance to collect the funds by a debit transfer from the cardholder's account. That may change soon as bill-presentment services come into play, but there is not yet any widely used mechanism for making those payments electronically. The most likely contender for use in the immediate future seems to be the United States Postal Service's recently introduced USPSeBillPay service, which can be studied (or joined) at http://www.usps.com/ebpp/welcome.htm.

[14] *See supra* notes 1 & 5.

[15] *See* Japanese Bankers Association, *supra* note 1, at 3. As mentioned above, credit cards in the United States accounted for 21% of the value of transactions even when cash is included. Excluding the 19% of transaction value handled by cash (to make the figures comparable), the share of credit cards would rise to 26%, more than twice the Japanese share.

[16] *See NIKKEI Share Survey 100: Credit Cards*, NIKKEI INDUSTRIAL DAILY, Aug. 3, 2000 http://www.nni.nikkei.co.jp/AC/TNKS/Search/Nni20000803DTWNS096.html [hereinafter *NIKKEI 1999 Credit-Card Data*].

compared to about $3,500 per capita in the United States.[17] As you would expect given the larger role of cash payments in Japan, the average credit-card transaction is much larger in Japan than it is in the United States, in the range of ¥25,000 (about $225).[18]

Perhaps the most important feature of the Japanese transactions is the limited extent to which they involve credit. The overwhelming majority – 80% or more – of Japanese credit-card transactions are settled by "*ikkai barai*."[19] Under ikkai barai,

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[17] The $3,500 figure is calculated from the data *supra* in the text accompanying note 8. *See also* BIS, *Comparative Payments Study*, *supra* note 5, at 23 chart 5 (data showing that as of 1997 Japan had four card transactions per individual, the fewest of any of the twelve nations compared). The United States, for example, had 62 debit- and credit-card transactions per capita. *See id*.

[18] I base that estimate on 1997 statistics from the Bank for International Settlements, which show 720 million transactions for a total of ¥17.8 trillion. Bank for International Settlements, Committee on Payment and Settlement Systems, *Statistics on Payment Systems in the Group of Ten Countries* 56 tbls. 12, 13 (Feb. 2000), *available at* http://www.bis.org [hereinafter BIS, *1998 Payments Statistics*]. Although the table is not explicit on that point, I believe that it includes only credit-card use for purchase activity, because the total transaction value is similar to statistics published by the Japan Consumer Credit Industry Association (JCIA). JCIA statistics show a total of ¥19 trillion in Japanese credit-card shopping transactions for 1998. NIHON NO SHŌHISHA SHINYŌ TŌKEI [JAPAN CONSUMER CREDIT INDUSTRY ASSOCIATION, CONSUMER CREDIT STATISTICS OF JAPAN] 33 (2000).

Cash advances and other finance activity are not relevant to my research, but currently account for about one quarter of Japanese credit-card activity. *See Credit Card Use Grows Despite Debit Card Acceptance*, NIKKEI FIN. DAILY, June 14, 2000, http://www.nni.nikkei.co.jp/AC/TNKS/Search/Nni20000614D13JKN09.html (reporting that ¥419.2 billion out of ¥1.73 trillion of April 2000 credit-card transactions were for cash advances and other non-purchase activity).

[19] None of the published aggregate industry data separates out the precise share of ikkai barai or revolving credit; instead it divides transactions into "kappu," those which involve a substantial deferral of payment, and "hikappu," those which do not. Hikappu generally includes not only ikkai barai, but also nikai barai (payment in two installments) and bonus payment (repayment out of the cardholder's bi-annual bonus). Kappu includes revolving credit and installment plans that are *both* three or more payments *and* two or more months. *See* KAPPU HANBAIHŌ [INSTALLMENT SALES LAW], Law No. 159 of 1961, art. 2(3). For the industry as a whole, data from the Japan Consumer Credit Industry Association shows that kappu transactions as of 1998 were only 12.7% of all transactions, and only 3.3% of transactions at bank-affiliated issuers. *See* JAPAN CONSUMER CREDIT INDUSTRY ASSOCIATION, *supra* note 18, at 33.

Although I have been unable to locate published data that provides a specific breakdown of ikkai barai, the data seems to be widely available to participants in the industry.

the consumer agrees (at the point of purchase) that the transaction will be paid to the issuer in full on the next monthly payment date.[20]

The full implications of ikkai barai for the credit-card system come from its interaction with the general absence of the check from the Japanese consumer payment system.[21] The ordinary Japanese consumer pays bills by a credit transfer or

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For a more specific breakdown (to estimate the large market share for ikkai barai), I rely on unpublished data provided to me at five different interviews, as follows:

Industry-Wide: The only estimate I received of industry-wide usage of ikkai barai stated that 87% of transaction value in the credit-card industry is settled by ikkai barai. *See* Anonymous Interview One, Tokyo (Oct. 11, 2000) [hereinafter Anonymous Interview One].

Shinpan Kaisha: As for transactions using cards issued by shinpan kaisha, executives at the shinpan kaisha that I interviewed stated that 80% of the transaction value at their particular company is paid by ikkai barai, and that only 2.5% is paid by revolving credit. Anonymous Interview Two, Tokyo (Sept. 19, 2000) [hereinafter Anonymous Interview Two].

Bank-Affiliated Issuers: For bank-affiliated issuers, I received an estimate of usage at all bank-affiliated issuers, as well as specific data from the portfolios of two of the bank-affiliated issuers that I interviewed. The general industry estimate suggested that 85-90% of bank-card transaction value normally is handled by ikkai barai, and that the share of revolving credit varies in the range of 3-5% of transaction value. Anonymous Interview Three, Tokyo (Sept. 22 & Oct. 10, 2000) [hereinafter Anonymous Interview Three].

The first specific bank-affiliated issuer data indicated that its 1999 transactions produced 87.4% ikkai barai, 4.5% nikai barai, 3.5% bonus payment (repayment out of the cardholder's bi-annual bonus), and 4.6% revolving credit. *See* Anonymous Interview Four, Tokyo (Oct. 17, 2000) [hereinafter Anonymous Interview Four]. The second specific bank-affiliated issuer data was for 1999, and indicated a 90% share for ikkai barai, 3% for nikai barai, 2% for bonus payments, and 5% for revolving credit. *See* Anonymous Interview Five, Tokyo (Oct. 12, 2000) [hereinafter Anonymous Interview Five].

Several of the interview subjects explained that the shares of ikkai barai and revolving credit for bank-affiliated issuers are slightly higher than they are for other issuers, because banks and their affiliates cannot yet offer extended specified payment options such as "*sankai barai*" (payment in three months) or "*jukkai barai*" (payment in ten months). Those options (barred to banks and their affiliates) amounted to about 10% of the transactions at the shinpan kaisha. *See* Anonymous Interview Two, *supra*. Those differing percentages may begin to converge soon, because the other options will be permitted to bank-affiliated issuers starting in 2001. *See generally infra* note 60 and accompanying text (discussing termination of restrictions on non-revolving kappu products by bank affiliates).

[20] *See* JCB Card Rules and Regulations arts. 8, 9(1) (undated) [copy on file with author] [hereinafter JCB Cardholder's Agreement] (providing for calculation of charges as of the 15th day of each month, mailing of a statement showing those charges, and a bank transfer to pay the charges on the 10th day of the following month).

[21] *See supra* note 5.

a prearranged debit transfer (closely analogous to automated clearinghouse transactions in the United States). Thus, in the credit-card transaction, the customer's consent to ikkai barai amounts not only to a general commitment to pay in one month – analogous to the American cardholder's general commitment when it signs a credit-card slip that it will repay "in accordance with the agreement with the issuer." The consent to ikkai barai also includes an authorization for a transfer out of the customer's account to pay the transaction shortly after the last day of the payment cycle.[22] Because the cardholder at the point of purchase already has agreed to pay the issuer a specified amount of funds from a specified account, the transaction resembles much more closely an American debit-card transaction than an American credit-card transaction.[23]

After the end of each payment cycle, the issuer sends the cardholder a statement summarizing the charges.[24] Absent an affirmative and timely objection by the cardholder,[25] the issuer causes the funds to be transferred from the cardholder's bank account to the issuer's account on the designated date.[26] When the cardholder

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[22] *See* JCB Cardholder's Agreement, *supra* note 20, art. 9(1) (establishing payment cycles that end on the 15th day of each month, with payments transferred on the 10th day of the succeeding month).

[23] This method of paying credit-card bills is not unique to Japan. My discussion with European students suggests that it is common in Europe as well. That may reflect the similarity of continental Europe to Japan in that neither has checks as a substantial consumer payment system. *See supra* note 5.

[24] *See* JCB Cardholder's Agreement, *supra* note 20, art. 8 (providing for a statement sent by ordinary mail describing all charges made by the 15th day of each calendar month).

[25] As discussed below, *see infra* notes 38-40 and accompanying text, the system differs from the United States system in that the cardholder generally has no legal basis for objection to transactions that the cardholder has authorized.

[26] *See* JCB Cardholder's Agreement, *supra* note 20, arts. 8, 9(1) (authorizing a payment on the 10th day of the month if the customer does not object within one week of the customer's receipt of the monthly statement). In the rare case in which the card is issued by a bank the bank might take the funds by a simple removal of funds from the account. In the more common case in which the card is issued by some entity that is not a bank (that is, a bank affiliate, shinpan kaisha, or retailer-affiliated card issuer), the issuer obtains the funds by a bank-debit transfer. *See* JCB Cardholder's Agreement, *supra* note 20, art. 9(1) (granting permission for the bank transfer). The need for the issuer to obtain payment by such a transfer means that issuers will issue cards only to consumers that have bank accounts at institutions with which the issuer has a debit-transfer agreement. Most issuers have such relations with several institutions,

uses ikkai barai, there typically is no interest or other charge for the deferral of payment from the date of the transaction to the monthly payment date.[27] Thus, the 80% (or greater) share of transactions processed by ikkai barai involves no significant extension of credit by the issuer.

B. LEGAL DIFFERENCES

Most card-based payment systems include institutions for responding to situations in which a cardholder believes that a charge has been applied to the cardholder's account incorrectly. The two most common protections respond to claims that the cardholder did not authorize the transaction and to claims that the merchant failed to perform as agreed. The United States includes relatively robust legal protections for consumers that have either of those problems. First, under § 133 of the Truth-in-Lending Act (TILA), the issuer cannot impose liability in excess of $50 on the cardholder for transactions that the cardholder did not authorize.[28] Moreover, the largest American system (Visa) has voluntarily agreed not to collect the $50, so American Visa cardholders have no responsibility at all for unauthorized transactions.[29] Similarly, under TILA § 170, consumers generally can present against the issuer any defense to payment that they would have against the merchant.[30]

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but the need for such a relation apparently does constrain issuers' ability to issue cards. *See* Anonymous Interview Three, *supra* note 19.

[27] There is nothing unusual about the absence of interest in those transactions; it is similar to the typical American practice, in which there is no interest charge for convenience users that pay their bills in the entirety each month. *See* Todd J. Zywicki, *The Economics of Credit Cards*, 3 CHAPMAN L. REV. 79, 101-04 (2000).

[28] 15 U.S.C. § 1643.

[29] *See* Lisa Fickensher, *Visa Shores up Web Position, Ends Fees on Theft of Card Numbers*, AM. BANKER, Feb. 22, 2000, at 1, 14.

[30] 15 U.S.C. § 1666i. The provision does not apply to transactions for less than $50 or to transactions that occur outside the state of the cardholder's residence and more than 100 miles from that residence. *Id*. Interviews with industry observers suggest to me that issuers ordinarily do not enforce those limitations. *See*, *e.g.*, Telephone Interview with Paul Confrey, Vice President, Electronic Commerce Planning and Communications, MasterCard (Nov. 10, 1999) [hereinafter Confrey Interview] [transcript on file with author] (transcript at 8-9);

On both of those points, Japan provides considerably less formal protection to the cardholder. First, as for unauthorized transactions, Japan provides no statutory protection. It is not clear, however, that the distinction is important, because Japanese credit-card issuers all seem to provide to their cardholders insurance against unauthorized transactions.[31] They sometimes offer it for free, they sometimes charge a separate (mandatory fee), and they sometimes pay for it from the annual fee, but it appears that the coverage is provided to all cardholders in the industry.[32] One industry executive explained that the issuers provide the insurance because of the difficulty issuers would face in charging their customers for transactions that the customers did not authorize. The basis for such charges would be the standard provisions in the cardholder agreement stating that the cardholder is generally responsible for charges made with the card, whether or not the cardholder

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Telephone Interview with Steven Klebe, Vice President, Payment Industry Alliances, CyberSource Corporation (Oct. 19, 1999) [hereinafter Klebe Interview] [transcript on file with author] (transcript at 4-5).

[31] The insurance does not cover all types of unauthorized transactions. *See* Takayoshi Suefuji, *Kurejitto Kādo Nyūmon* [INTRODUCTION TO CREDIT CARDS], GEKKAN SHŌHISHA SHINYŌ [CONSUMER CREDIT MONTHLY], 2000-8, at 74, 75 (describing insurance limited to theft and loss of the card). Moreover, it is limited to unauthorized transactions that occur no more than 60 days before, and no more than 60 days after, the cardholder advises the issuer of the loss. *See id.* It is possible that a few losses occur outside that window, especially if cardholders fail to examine their statements. Like the American limits discussed in note 30 *supra*, however, those limitations seem to be widely ignored. Specifically, my interviews strongly suggest that issuers commonly cover losses whether the losses are covered by the insurance or not. The sole exception seems to be in cases in which the cardholder was seriously negligent in losing the card; even that possibility seems not to be commonly applied. *See* Anonymous Interview Two, *supra* note 19; Anonymous Interview Three, *supra* note 19; Anonymous Interview Six, Tokyo (Oct. 31, 2000) [hereinafter Anonymous Interview Six]. It appears that the issuers' common willingness to cover transactions without regard to the precise boundaries of the insurance coverage is related at least in part to administrative guidance from MITI, which has suggested to credit-card issuers that the insurance typically provided is not adequate to provide appropriate protection to consumers. Kādo no anzensei no kakuho ni tsuite [To Ensure the Security of Credit Cards] (guidance sent from MITI to the Japan Consumer Credit Industry Association on July 31, 1979).

[32] *See* Anonymous Interview Two, *supra* note 19; Anonymous Interview Three, *supra* note 19. The issuers normally purchase the insurance from third-party providers, but sometimes self-insure. *See* Anonymous Interview Two, *supra* note 19; Anonymous Interview Three, *supra* note 19.

specifically authorizes the charges.[33] Card issuers are concerned, that observer explained, that courts would find that provision unenforceable if the issuers did not provide insurance.[34]

Japan also provides less robust protection for cardholders that are dissatisfied with the performance of their merchants. The relevant protection appears in Articles 30-4 & 30-5 of Kappu Hanbaihō [the Installment Sales Law], which provide that a card holder can raise against an issuer any defense that he had against the seller.[35] That statute, however, is narrower than the American statute in quite important ways. Most obviously, the American statute applies until the customer repays the amount in question.[36] Even if the cardholder pays the entire bill at the first opportunity (something most American cardholders do not do[37]), that typically will be about a month after the transaction. In Japan, however, the statute applies only to transactions in which the cardholder substantially defers payment.[38] Because those transactions are a relatively small share of the Japanese credit-card industry, roughly ten percent of all transactions,[39] the protection of the provision in fact seems to be quite narrow.[40]

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[33] *See*, *e.g.*, JCB Cardholder's Agreement, *supra* note 20, art. 14(1) (generally requiring the cardholder to pay when the card is used by a third party due to the loss or theft of cards or because the cardholder has lent or given the cards to somebody).

[34] *See* Anonymous Interview Two, *supra* note 19.

[35] KAPPU HANBAIHŌ [Installment Sales Law], Law No. 159 of 1961.

[36] *See* TILA § 170(a); RONALD J. MANN, PAYMENT SYSTEMS AND OTHER FINANCIAL TRANSACTIONS 118 (1999) (discussing that aspect of TILA).

[37] As noted above, less than half of American cardholders pay their entire bills each month. *See supra* note 12.

[38] The statutory protection applies only to "kappu." *See* KAPPU HANBAIHŌ [Installment Sales Law], Law No. 159 of 1961, arts. 30-4 & -5; *see also supra* note 19 (discussing the definition of "kappu").

[39] Only 12.7% of 1998 transaction value involved kappu. *See* JAPAN CONSUMER CREDIT INDUSTRY ASSOCIATION, *supra* note 18, at 33.

[40] The statute recently was broadened, but the revision did not address the limits discussed in the text. *See* Hōmon hanbai tō ni kansuru hōritsu oyobi Kappu hanbaihō no ichibu wo kaisei suru hōritsu [Law Amending Door-to-Door and Other Direct Sales Law and Installment Sales Law], Law No. 34 of 1999; Ministry of International Trade and Industry,

Again, as with statutory protection against unauthorized transactions, it is not clear that the absence of statutory protection is a major problem for cardholders. American cardholders present those claims quite rarely, in only a small fraction of 1% of their transactions.[41] On the other hand, the protection certainly is important in the transactions in which such claims are presented: it substantially enhances the cardholder's leverage against the merchant in resolving the dispute. Moreover, the rise of "MOTO" (mail-order/telephone-order) and internet transactions substantially increases the potential for merchant fraud, and thus the likely importance of such protections.[42] Thus, although, it is difficult to characterize the difference in protection as significant, the limited cost of the protection suggests that the Japanese card industry[43] would lose little if the protection were offered and that cardholders would gain substantially, if only in their confidence in the cards.

C. THE LIMITED USE OF CREDIT

The most difficult aspect of the Japanese system to explain is why Japanese cardholders use credit so rarely in those transactions in which they use their credit cards. The most obvious explanation is the simplest, but also the least satisfying: Japanese cardholders by nature are more cautious, and averse to borrowing, than American consumers. Thus, it is natural that they should use credit less. That habit could be connected to the substantial literature attempting to explain what seems to

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Outline of Amendment to Door-to-Door Sales and Other Direct Sales Law and Installment Sales Law (Draft) (Mar. 4, 1999) http://www.meti.go.jp/english/report/data/gCD1101e.html (describing the purpose of the revisions).

[41] *See* Telephone Interview with Michael Butts, CreditCard.com (Oct. 15, 1999) [transcript on file with author] (transcript at 1); Klebe Interview, *supra* note 30 (transcript at 6).

[42] See MITI Eyes Consumer Protection from Deceptive E-Commerce, NIHON KEIZAI SHIMBUN, Aug. 7, 2000, *available at* http://www.nni.nikkei.co.jp. Merchant fraud is a bigger problem in MOTO and internet transactions because it is harder for consumers to locate a fraudulent merchant that sells from a remote location. *See*, *e.g.*, *FTC Exposes Top 10 Web Scams* (Oct. 31, 2000) http://www.cnn.com/2000/TECH/computing/10/31/ftc.web.scams/index.html.

[43] The protection costs the industry little because the costs of such claims generally are borne by the merchants in question, who ordinarily are required to return to the acquirer (and then the issuer) any funds that they have received for transactions as to which such a claim is presented. *See* MANN, *supra* note 36, at 117-18.

be the higher predilection to save of the individual Japanese consumer.[44] From that perspective, the other side of a higher predilection for savings would be a lower tendency to use consumer credit. The biggest problem with that theory is the empirical fact that the Japanese consumer credit market as a whole appears to be about as large per capita as the American consumer credit market. Specifically, the American consumer credit market is now in the range of $1.3 trillion (about $4,700 per capita).[45] The Japanese market seems to be about ¥71 trillion (about $4,900 per capita).[46]

It is the nature of such theories that they are difficult to disprove.[47] Thus, it is not possible to deny that explanation entirely. It does, however, have a number of obvious problems. The first is that much of the academic literature explains the higher savings rate not as a special aspect of the Japanese personality, but instead as a result of other institutional features of the Japanese economy. For example, some scholars think the higher rate of savings is caused by the Japanese system for intergenerational transfers of wealth,[48] while others view it (even now) as an artifact of Japan's stage of industrial development.[49] Although those explanations would

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[44] Recent data, for example, suggests that Japanese working households save about 28.5% of their income (up from 20.9% in 1983); the comparable American rate is below 10 percent. Yoshikazu Yada & Haruki Hirano, *Statistics on Personal Savings Tell Half the Story: Despite Statistics, Most People Aren't That Rich*, ASAHI SHIMBUN, Aug. 10, 2000, *available at* http://www.asahi.com/ english/asahi/0810/asahi081002.html (visited Aug. 11, 2000).

[45] *See Federal Reserve Statistical Release G.19 (Consumer Credit)* (Jan. 8, 2001), *available at* http://www.federalreserve.gov/releases/G19/Current/g19.pdf; *see also* TERESA A. SULLIVAN, ELIZABETH WARREN & JAY LAWRENCE WESTBROOK, THE FRAGILE MIDDLE CLASS: AMERICANS IN DEBT 258 (2000).

[46] *See* JAPAN CONSUMER CREDIT INDUSTRY ASSOCIATION, *supra* note 18, at 30.

[47] *See* J. MARK RAMSEYER, ODD MARKETS IN JAPANESE HISTORY 7-8 (1996) (noting the "simple circularity" that often afflicts cultural descriptions of Japanese economic phenomena).

[48] For a thorough but ultimately inconclusive attempt to explain that phenomenon, see FUMIO HAYASHI, UNDERSTANDING SAVINGS ch. 11 (1997).

[49] Richard Katz argues that consumers in the aggregate save more at earlier stages of Japanese development and thus that the post-WWII data suggesting higher savings by Japanese consumers is caused by Japan's place at an earlier stage in the development process during those years. *See* RICHARD KATZ, JAPAN: THE SYSTEM THAT SOURED 141-42, 199-206 (1998).

explain a lower rate of consumer spending, they provide much less direct support for the lower rate of consumer borrowing that appears in the credit-card market. Specifically, they provide little support for the specific observation in question: a lower rate of borrowing in those transactions in which consumers choose to purchase by credit card.[50]

To explain that pattern, it seems more useful to look to the specific history and structure of the Japanese credit-card market. Perhaps the most obvious thing about the structure of the market is the strong role that nonbank issuers play in that market. In the United States, cards issued by banks account for almost two-thirds of the market: Visa has about 38% of the market and MasterCard about 21% of the market.[51] In Japan, by contrast, the role of the banks is quite a bit more limited. As of 1998, cards issued by companies affiliated with banks were responsible for only about 49% of Japanese credit-card shopping. Cards issued by retailers amounted for another 29%; cards issued by shinpan kaisha for another 17%.[52] Those numbers might not seem so different from the American numbers, but they obscure a more fundamental point, the limited role bank-affiliated issuers play with respect to credit: bank-affiliated issuers had only 13% of the extended ("kappu") borrowing done by credit cards.[53]

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[50] Assuming that the return on saved assets is less than the interest charges associated with consumer borrowing, it is arguably irrational for consumers with savings to borrow. Thus, the higher rate of savings in Japan might support a lower rate of borrowing – because fewer individuals would rationally borrow. It seems clear, however, that in both countries individuals with savings do borrow despite the interest charges that could be avoided by liquidating saved assets. Thus, that explanation seems incomplete.

[51] *See 1999 US Card Data*, *supra* note 8, at 7. Because the average bank credit-card transaction is a bit larger than the average credit-card transaction, the bank-issued cards' shares of transaction volume are a bit smaller: Visa (37%), MasterCard (21%), Diners Club/JCB (0.3%). *See id*.

[52] *See* JAPAN CONSUMER CREDIT INDUSTRY ASSOCIATION, *supra* note 18, at 68. The text uses the term "retailers" loosely to cover cards issued by department stores directly (25.1% of volume), manufacturers (1.3% of volume), and associations of small retailers (3.0% of volume).

[53] *See* JAPAN CONSUMER CREDIT INDUSTRY ASSOCIATION, *supra* note 18, at 49-50.

The limited role of banks in the credit-card system surely is related in a general way to the limited attention that banks in Japan have devoted to consumer finance.[54] Even now, notwithstanding the financial pressures that have confronted the Japanese banking industry in the late 1990's, it is not clear that Japanese banks have turned whole-heartedly to consumer finance.[55]

But the relatively limited bank role in the credit-card market in particular has a more specific explanation: a long (and not-yet-ended) history of regulatory exclusion from the market. Given the success that American banks have had in the credit-card market, it is surprising to learn of the tradition limiting the participation of Japanese banks and their affiliates in that market. The precise reason for the exclusion is not entirely clear. Mark Ramseyer and Frances Rosenbluth argue that the exclusion generally was designed to protect smaller credit companies that would have suffered from competition with the banks.[56] At least in part, at some times, however, it seems also to have been designed to protect retailers as well.[57]

In any event, for whatever reason, banks (but not their affiliates) were entirely barred from issuing credit cards until 1982.[58] Not until 1992 were bank-

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[54] *See* STEPHEN M. HARMER, JAPAN'S FINANCIAL REVOLUTION AND HOW AMERICAN FIRMS ARE PROFITING 37 (2000) ("[W]hile banks in the United States quickly reoriented themselves to the consumer finance market when corporate lending spreads narrowed, Japanese banks never made the transition.").

[55] *See* HARMER, *supra* note 54, at 40-41, 126, 136.

[56] *See* J. MARK RAMSEYER & FRANCES MCCALL ROSENBLUTH, JAPAN'S POLITICAL MARKETPLACE 55-57 (1993).

[57] The smaller retailers have their own credit companies, such as senmonten kai. It appears that it was the retailers themselves rather than simply their finance companies that were among the particular objects of protection. *See* Kurejitto Sangyō Bukai, Kappu hanbai shingikai [The Credit Industry Committee in the Installment Sales Council], *Kurejitto sangyō no kongo no arikata ni tsuite* [*Interim Report: The Desirable Future of the Credit Industry*] (1990) [hereinafter *Report on the Future of the Credit Industry*] (discussing the need for protection of small retailers as part of the historical background behind the restriction preventing bank-affiliated issuers from issuing cards that allow revolving credit).

[58] Under the Ginkōhō [Banking Law] of 1927, Law No. 21 of 1927, there was no express bar of credit-card services, but administrative guidance excluded banks from that business. *See* GENDAI GINKŌ TORIHIKIHŌ [THE CURRENT BANKING LAW] 686 (Kinyūzaiseijijyōkenkyūkai, Ichirō Katō & Shōzō Yoshihara eds. 1987) [hereinafter GENDAI

affiliated issuers permitted to issue cards that allowed revolving credit.[59] And not until 2001 will Japanese bank-affiliated issuers be permitted to issue cards that include the other borrowing options typical of the industry (that is, the various options for payment by several installments).[60]

To be sure, the exclusion of banks from the credit-card market does not necessarily preclude the development of a market for credit-card lending. But the development of the industry in the United States, together with the current state of the industry in Japan, does suggest that the long exclusion of banks from the market can explain much of the limited use of credit in the credit-card market. The credit-

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GINKŌ TORIHIKIHŌ]. The Ginkōhō [Banking Law] of 1981, Law No. 59 of 1981, did not specifically authorize the credit-card business, but it did permit banks to engage in "business ancillary to banking." Ginkōhō [Banking Law] of 1981, Art. 10.2. That language was construed to include the credit-card business. *See* GENDAI GINKŌ TORIHIKIHŌ, *supra*, at 686; YOSHIAKI KOYAMA, GINKŌHŌ [BANKING LAW] 241 (Ōkurazaimukyōkai 1992).

[59] No specific statute barred revolving credit, but, based on the sentiments expressed in a resolution accompanying a statute that amended the Installment Sales Law, the government did not permit bank-affiliated entities to register to offer revolving credit or other forms of kappu. For the resolution, see Kappu Hanbaihō no ichibu wo kaiseisuru hōritsuan ni taisuru futai ketsugi [Supplementary Resolution Amending Installment Sales Law] (May 10, 1984) [hereinafter Supplementary Installment Sales Law Resolution]. For discussion of its significance to later policy, see KINYŪ IT KENKYŪKAI [STUDY GROUP REGARDING IT IN FINANCIAL SERVICES], DEBITTO KĀDO KAKUMEI [THE REVOLUTION IN DEBIT CARDS] 53-54 (Takarajimasha 2000) [hereinafter THE REVOLUTION IN JAPANESE DEBIT CARDS]; *Dai ippen kurejitto sangyō no jittai* [*Part 1: The history and current situation of credit industries*], in KUREJITTO TORIHIKI JITSUMUZENSHO [CREDIT TRANSACTION GUIDANCE] 110 (Daiichihōki 1991) [hereinafter CREDIT TRANSACTION GUIDANCE].

The government ultimately decided, notwithstanding the sentiments expressed in Supplementary Installment Sales Law Resolution, *supra*, to permit bank-affiliated card issuers to allow revolving credit based on recommendations in *Report on the Future of the Credit Industry*, *supra* note 57 (which had called for the government to permit bank-affiliated companies to enter the revolving-credit business by 1992). *See Tokubestu ronbun: Kinyū sābisu ni okeru kādo no yakuwari to tenbō* [*Special Report: The Perspective and Function of Cards in Financial Services*], in KINYŪ JYŌHŌ SHISUTEMU HAKUSHO 3, 25 (Zaikeishōhōsha 2000).

[60] THE REVOLUTION IN JAPANESE DEBIT CARDS, *supra* note 59, at 96-97; Kurejitto Sangyō Bukai, Kappu hanbai shingikai [The Credit Industry Committee in the Installment Sales Council], *Kurejitto kādo no seidoteki seiyaku no kaiketsu no arikata to kurejitto sangyō ni kyōtsūsuru kadai e no torikumi ni kansuru hōkoku* [*Interim Report: The Way To Solve Structural Limitations in Credit Cards and a Program for Solving Common Problems in Credit Industries*] (1998).

card market in the United States developed in the late 1960's and 1970's out of the relatively small market for payment cards exemplified by American Express, Diners Club, and Carte Blanche in the early 1960's.[61] As the name "payment" card suggests, those cards did not contemplate an extension of credit; they provided only a payment function – facilitating transactions at distant merchants that would be reluctant to accept checks from the cardholder.[62] The 1970's and 1980's in the United States witnessed the introduction, spread, and success of the general-purpose credit card, all at the instance of American banks (primarily Bank of America in California).[63]

One way to look at the Japanese card market – with its ikkai barai-dominated payment structure – is to view it as just starting to move beyond those payment cards. It is not a coincidence that the credit card first introduced in Japan in 1960[64] and is said to have been modeled directly on the American Express and Diner's Club payment cards.[65] Without banks in the marketplace, the industry has for the most part been static since that time: the products available to consumers have not been sufficiently attractive to produce the consumer reaction visible in the United States.

That is seen most clearly in the institution of revolving credit, which is so strangely missing from the Japanese credit-card market.[66] At least part of the answer must be the relatively unattractive features of that product as it exists in Japan. Specifically, "revolving" credit in Japan does not permit the freely chosen, month-to-month varying payments typical of the American cardholder. Rather, the cardholder agrees, at the time that the card is issued, that any transactions designated as "revolving" will be paid back over a prearranged schedule (perhaps 10% per month,

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[61] *See* DAVID EVANS & RICHARD SCHMALENSEE, PAYING WITH PLASTIC: THE DIGITAL REVOLUTION IN BUYING AND BORROWING 61-84 (1999).

[62] *See* EVANS & SCHMALENSEE, *supra* note 61, at 62-65.

[63] *See* EVANS & SCHMALENSEE, *supra* note 61, at 65-69.

[64] *See* CREDIT TRANSACTION GUIDANCE, *supra* note 59, at 108.

[65] *See* Anonymous Interview Three, *supra* note 19.

[66] *See supra* note 19 (estimating revolving credit in the Japanese credit-card market).

perhaps 10,000 yen per month).[67] The product is designed in that cumbersome way for a reason: in the absence of checks, it is much less practical for the Japanese cardholder to make the odd-amount monthly payments than it is for the American cardholder that normally pays by check.[68] But despite that practical cause for the payment method, the fact remains that the so-called revolving credit traditionally offered to Japanese consumers is not nearly as convenient as the product available in the United States.

Still, it is difficult to understand why the non-bank players in the credit-card industry have not stepped into the void to provide the seductive products that American banks have designed to facilitate the profitable extension of so much consumer credit in the United States. It is clear that the major players are aware of the profitability of revolving credit; most of them have simply failed in their efforts to persuade their customers to use it.[69]

For me, the best explanation is that banks are best-placed to develop credit-card products that facilitate large amounts of borrowing.[70] The basis of their advantage is that the information that banks acquire from their depositary and other

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[67] *See* CREDIT TRANSACTION GUIDANCE, *supra* note 59, at 6493 (describing the typical schedules for repayment of revolving credit from JCB).

[68] *See* Anonymous Interview Four, *supra* note 19; Anonymous Interview Five, *supra* note 19. The plausibility of that explanation as a causative force is undermined by the recent introduction of a conventional revolving-credit product in Japan that does permit consumers free choice of their monthly payment amounts. *See infra* notes 78-80 and accompanying text.

[69] *See* Kurejitto Sangyō Hakusho [*White Paper on Credit Industry*], GEKKAN SHŌHISHA SHINYŌ [CONSUMER CREDIT MONTHLY], 2000-9, at 12, 14-15 [hereinafter *Credit Industry White Paper*] (discussing efforts of banks to increase the amount of revolving credit). I asked executives at one interview why – if they want their consumers to use revolving credit – the default repayment option is ikkai barai rather than revolving credit. They explained that so many consumers so clearly want ikkai barai that they expected that they would face a serious adverse market reaction if their cards had anything other than ikkai barai as the default repayment option. *See* Anonymous Interview Two, *supra* note 19.

[70] Banks could (and, to some extent, do) build on account relationships to develop products that facilitate large amounts of borrowing without cards (such as overdraft facilities or loans secured by time deposits). The most obvious problem for acceptance as a retail credit device would be that such a product would depend on the use of another payment device (such as a check or a bank transfer) that would be less convenient to the consumer than the card.

relations with their customers puts them in a superior position to provide credit-card lending services. It is easy to forget, but the credit-card business was extraordinarily risky in the early days when the modern credit-card business model was being developed.[71] If it was difficult even for banks with their customer-relation information to develop the sophistication necessary for a profitable credit-card operation, it is plausible to think that other types of financial institutions without such information advantages might have been cautious in pushing into the area.

To be sure, store cards in the United States now have a phenomenal ability to generate borrowings.[72] But they showed no capacity to generate those borrowing in the early days of the industry, before banks developed and popularized the credit-card model. It also is true that much of the credit-card market in the United States has been taken over by "monoline" banks, which generally have no relation with their customers other than the card. Thus, as of 1995, only 16% of MasterCard and Visa cards were issued to cardholders that had *any* other relationship with the issuing bank.[73] But those banks appeared quite late in the development of the credit-card market in the United States.[74] And they depend for their success on the economies of scale in sophisticated processing – "credit-scoring" – of the individuals to whom they issue cards.[75] With that type of technology, it is easy to see that the bank's

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[71] *See* EVANS & SCHMALENSEE, *supra* note 61, at 68-69 (discussing large losses in the early days of the credit-card industry incurred by, among others, Wells Fargo, Bankers Trust, and Citibank); *id*. at 75 (discussing heavy losses incurred by American Express in its attempt to enter the credit-card market).

[72] At the end of 1998, the ratio of outstanding receivables to total annual volume for United States store cards was 78%, which compares favorably to MasterCard's ratio of 60% and Visa's ratio of 50%. Payment cards typically have much lower ratios: American Express had a ratio of 20%; oil-company cards had a ratio of 10%. {Those ratios are calculated from *Credit Cards*, *supra* note 8, at 7.} *See also supra* note 12 (discussing general industry trends of that ratio).

[73] *See* EVANS & SCHMALENSEE, *supra* note 61, at 208-09.

[74] *See* EVANS & SCHMALENSEE, *supra* note 61, at 12 (discussing the rise of monoline banks in the early 1990's).

[75] *See* Jane Tanner, *Investing: Everyday Plastic, Spun into Gold*, N.Y. TIMES, Sept. 17, 2000, *available at* http://www.nytimes.com; Miriam Kreinin Souccar, *Providian Pitch Spurs Fear of Credit Data Poaching*, AM. BANKER, Dec. 6, 1999, at 1, *available at* 1999 WL 21145379.

customer-relation information is not nearly so important as it might have been in the early days of the industry.[76]

Indeed, the success of the technology-driven monoline bank has shown the way to a significant recent innovation in the Japanese credit-card market: the introduction by at least one consumer-finance company of a credit card that offers the type of revolving credit that has been so successful in the United States.[77] Such a card permits consumers to select their repayment schedule not at the time of purchase, but at the end of each billing cycle when they make a payment.[78] As you would expect based on the American market experience, the product seems to be successful, at least initially, in attracting customers.[79] It is claimed that the company's underwriting relies heavily on a credit-scoring model, an approach that seems to resemble closely the models used by American issuers.[80] The use of that technology is particularly surprising given the relatively limited availability in the Japanese consumer-finance industry of consumer financial information.[81]

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[76] Looked at from another perspective, the monoline bank – credit-card issuer without depositary relation – in some ways resembles the shinpan kaisha that is an important player in the Japanese market. The key difference, of course, is that the shinpan kaisha's transactions have a much lower share of borrowing than those of the typical American monoline bank. *See infra* note 86 (reporting statistics regarding the rate of borrowing in shinpan kaisha transactions).

[77] *See* HARMER, *supra* note 54, at 135-36 (discussing such a card).

[78] Some other issuers have used online connections to permit their customers an intermediate degree of flexibility, under which customers that have selected ikkai barai at the time of the transaction can go to the issuer's website and change the designation of any particular transaction to revolving credit. *See* http://www.sumitomovisa.co.jp/carduse/atoribo.html (Sumitomo Credit); http://home3.americanexpress.com/japan/blue/flex/flex_pay.asp (American Express). Although that might have much the same practical effect, it is still relatively cumbersome.

[79] The company has issued more than 500,000 cards in the first 18 months of the program (more than a third of them to customers with no previous relationship with the lender). For present purposes, the most important thing about the program is that those customers are using revolving credit for a staggering (for Japan) 91% of their purchases. *See* Anonymous Interview One, *supra* note 19.

[80] *See* Anonymous Interview One, *supra* note 19.

[81] It is difficult to understand exactly what kinds of information are available to consumer lenders in Japan, but it is clear that general statistical use of the information is not as

Perhaps the most persuasive point supporting the importance of the exclusion of banks is the recent history of the credit card in Japan, which in the last few years has displayed a marked convergence with the American pattern of usage. First, Japanese use of credit cards almost doubled between 1994 and 1998 (from 362.8 million transactions to 720.7 million transactions).[82] Interestingly, the amount of the transactions rose by only about 40% (from ¥12.5 trillion to ¥17.8 trillion), which resulted in a decrease of the average transaction of about 28% (from almost ¥34,500 yen to just under ¥25,000).[83] Second, on the specific point of relevance – the use of borrowing with credit cards – it is clear that the gross amount of borrowing is increasing,[84] and that the share of borrowing among bank-affiliated credit-card transactions is growing (by 74% in the last three years)[85] at the same time that the

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common in Japan as it is in America. For example, the largest consumer credit-reporting service in Japan reports that as of 1998 it had less than 70 million entries and that it received less than 20 million requests for information during 1998. *See* Personal Credit Information Center http://www.zenginkyo.or.jp/en/pcic/pcic.htm (visited Nov. 13, 2000). One likely reason for the limited information is that lenders must have the customer's consent to submit information to that center. *See id*.

Efforts to rely on the kinds of credit-scoring models that American crad issuers use are hampered by the limited willingness of the consumer-lending industry as a whole to share information. It appears that information generally is shared only within each sector (consumer-finance companies, shinpan kaisha, and banks). The only information that currently is shared industrywide is information about specific defaults. *See id*. Plans for more complete sharing of information are ongoing. *See Kokyaku shinyō jyōhō 12 gatsu kaihō* [*Consumer Credit Reports of Consumer Credit Companies Will Be Open to Shinpan and Bank-affiliated Companies in December*], NIHON KEIZAI SHIMBUN, Oct. 26, 2000, at 1. On the other hand, the government at the same time is likely in the near future to enact privacy legislation that would restrict information sharing. *See* sources cited *infra* note 186. Given the limited availability of information, it is impossible at this point to evaluate the effectiveness of that credit-scoring model: if it is properly designed, it would be a bold stroke of technological expertise; if not, it could be a cover that supports excessively risky lending.

[82] *See* BIS, *1998 Payments Statistics*, *supra* note 18, at 56 (tbl. 12).

[83] *See* BIS, *1998 Payments Statistics*, *supra* note 18, at 56 (tbl. 13).

[84] From 1995 to 1998 the total amount of kappu increased by 19%. *See* JAPAN CONSUMER CREDIT INDUSTRY ASSOCIATION, *supra* note 18, at 49-50.

[85] The share of kappu in bank-affiliated credit-card transactions (which first became legal in 1992) has risen by 74% (from 1.9% in 1995 to 3.3% in 1998). *See* JAPAN CONSUMER CREDIT INDUSTRY ASSOCIATION, *supra* note 18, at 49-50. Because revolving credit is the only form of kappu currently permitted to bank-affiliated issuers, *see supra* note 19, all of those transactions must be revolving credit. That trend seems to be continuing. One large Japanese

share of borrowing among credit-card transactions as a whole is declining (by 13% in the last three years).[86] It would be imprudent to give much weight to evidence of a macroeconomic trend appearing over such a short period of time – less than an entire economic cycle – but if the trend continued it would move Japanese usage patterns closer to those in the United States (with many more transactions of a significantly smaller amount).

To summarize, it may be that part of the difference in the use of credit in credit-card transactions arises from something different about the "taste" of the Japanese cardholder for borrowing, but a substantial part of the difference also must be attributable to differences in the institutional framework within which the card has developed, and in which it is used.[87]

D. THE EFFECTIVENESS OF THE SYSTEM

It is fair to wonder whether the same circumstances that have limited the use of credit in the Japanese credit-card industry have undermined the effectiveness of the system. The question is particularly important, because a first glance at the Japanese system suggests that it does quite a poor job. At least compared to the

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bank-affiliated credit-card issuer reported an increase of the share of revolving-credit value in its portfolio of 13.6% from 1998 to 1999. *See* Anonymous Interview Four, *supra* note 19. Another bank-affiliated issuer emphasized that revolving-credit usage is particularly increasing among its younger card users. *See* Anonymous Interview Six, *supra* note 31.

[86] The share of kappu among industry transactions of all kinds has declined from 19.5% in 1990, to 14.6% in 1995 to 12.7% in 1998 (a 13% decrease from 1995 to 1998). Much of that decrease seems to come from the shinpan kaisha sector, where the share of kappu declined in just three years from 38% to 32%. *See* JAPAN CONSUMER CREDIT INDUSTRY ASSOCIATION, *supra* note 18, at 49-50.

[87] This paper makes no normative judgments about the differences in the system, but I note that sophisticated observers of the American financial system – which displays one of the highest levels of consumer bankruptcy in the world – view the easy availability of borrowing by credit card not as a positive feature of the system, but as one of the leading causes of significant financial distress by American consumers. *See* Diane Ellis, *The Effect of Consumer Interest Rate Deregulation on Credit Card Volumes, Charge-offs, and the Personal Bankruptcy Rate*, BANK TRENDS 98-05 (FDIC, Division of Insurance, March 1998). *See generally* SULLIVAN, WARREN & WESTBROOK, *supra* note 45, ch. 4 (detailed data and analysis of the relation between the credit-card industry and consumer bankruptcy in the United States).

American system, the Japanese system is relatively expensive to the merchant that takes the card and also endures relatively high losses from fraud. In both cases, however, a closer look at the systems suggests that the raw differences in the statistics overstate the severity of those problems. Both problems are related to the limited use of credit and thus, like that phenomenon, do not seem to be long-term aspects of the system.

1. Discount Rates

In assessing the cost of a payment system, the most relevant cost is the cost to the end-users, the parties to the payment transaction. For a credit card, the simplest indicator of that cost is the discount fee that a merchant pays when it obtains funds for the transaction from the card system.[88] For the Visa and MasterCard credit-card systems that dominate the United States market, the discount fee varies widely depending on the type of merchant, but normally ranges between one-and-a-half to five percent, with most merchants seeming to pay something less than two percent. The discount fee for American Express (the largest competitor) is about 2.75 percent.[89] Although it is difficult to get specific information, the discount rates in Japan seem to be somewhat higher. Published sources suggest that rates often are

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[88] If the cardholder pays no fees, that charge is the entire charge for use of the system. In the United States that often is true because so many cards include no annual fees, and because the annual fees that are charged normally result in quite a small cost per transaction (because of the large number of transactions for which American cardholders use their cards). *See* EVANS & SCHMALENSEE, *supra* note 61, at 165 (American credit-card issuers derive only 2% of their income from annual fees). In Japan, however, the effective amount of those fees is much higher on a per-transaction basis, both because the cards are used in relatively fewer transactions (*see supra* note 17) and because annual fees seem to be much more common, *see* HARMER, *supra* note 54, at 132-33 (reporting data indicating that, excluding revenue from cashing commissions, 26% of credit-card industry revenue (37% of bank-affiliated issuer revenue) is from card members' fees). {I exclude revenue from cashing commissions because my purpose is to study the profitability of credit cards as a payment mechanism. I also exclude the much smaller share of cashing fees from the analogous statistics about American credit-card issuers.} Based on credit-card brochures that I collected during my stay in Japan, I estimate that a typical annual fee is in the range of ¥1,500.

[89] *See* EVANS & SCHMALENSEE, *supra* note 61, at 169-72 (discussing American Express discount fees).

above 5%,[90] but in fact rates seem to be quite a bit lower. Based on my interviews, my impression is that a typical rate is more commonly in the vicinity of 3-3.5%.[91]

The most persuasive explanation for the higher discount fees is the paucity of credit transactions. In the United States, credit-card issuers rely heavily on revenue from interest that their cardholders pay on borrowed funds. Thus, they can operate profitably with a relatively smaller reliance on revenue from the merchant.[92] For example, credit-card issuers in the United States derive 88% of their revenues from finance charges (including late fees), and only 10% from interchange fees.[93] In Japan, revenues from interest are a relatively small portion of the revenues of the card issuer, about 23% over the industry as a whole, but only 14% of the revenues of bank-affiliated card issuers.[94] Thus, the issuer's operations can be profitable only if it obtains a relatively higher share of revenue from the merchant and the cardholder. In Japan those fees amount to 77% of all industry revenues, but 86% of the revenues of bank-affiliated issuers.[95] And in fact the apparent discount rates of 3-4% are not out of line if they are compared to the rates that American Express charges for its payment card rather than the rates Visa and MasterCard charge for their credit

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[90] *See Would-Be Net Banks Jockey for Position*, NIKKEI WEEKLY, May 8, 2000, at 12 (reporting discount rates of over 5%); *Debit Cards Getting Ready for Big Time,* NIKKEI WEEKLY, Feb. 28, 2000 [hereinafter *Debit Cards Getting Ready*], at 15 (reporting credit-card discount rates of 3-7%).

[91] It does not seem appropriate to identify the specific bases for that impression.

[92] The issuer typically obtains those revenues indirectly through an interchange fee paid by the bank that acquires the transaction from the merchant. The acquiring bank pays the fee out of the (presumably larger) discount that the merchant pays to the acquiring bank. *See* MANN, *supra* note 36, at 113-16.

[93] *See* EVANS & SCHMALENSEE, *supra* note 61, at 165.

[94] *See* HARMER, *supra* note 54, at 132-33.

[95] *See* HARMER, *supra* note 54, at 132-33. Thus, the overall revenue model closely resembles American Express, which obtains only 15% of its revenues from finance charges (late fees), but derives 85% of its revenues from charges to users (66% from the charges it imposes on merchants and 19% from card fees). *See* EVANS & SCHMALENSEE, *supra* note 61, at 165. Indeed, the most prominent difference is that Japanese bank credit-card issuers impose a *smaller* share of those charges on the merchants (57%) than American Express (78%). {The shares are calculated from the data for Japanese issuers in HARMER, *supra* note 54, at 132-33, and from the data for American Express in EVANS & SCHMALENSEE, *supra* note 61, at 165.}

cards.[96] Because American Express faces the same lack of interest income that Japanese issuers do, its discount rates provide a more appropriate benchmark for comparison.

To be sure, the discount rates do appear to be cognizably higher than those that American Express charges in the United States. But several structural explanations make that slight difference readily understandable. Most obviously, a merchant's selection of an acquirer in the United States occurs in a relatively competitive market characterized by a small number of clearing networks with a large number of potential acquirers in each network. Thus, in the United States, a typical merchant can gain access to the Visa and MasterCard systems from any of literally dozens of banks, as well as a large number of sophisticated third-party acquirers. First Data might have a dominating share of the market (more than 40%), but there are such a large number of competitors of significant size that the market is relatively competitive,[97] in the sense that there is extensive *intra-brand* competition notwithstanding the limited *inter-brand* competition.[98] And even if American Express is the sole way for a merchant to get access to *its* cardholders, history shows that the rates that American Express can charge are affected by the rates that the larger Visa and MasterCard systems charge.[99]

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[96] *See supra* note 89 and accompanying text (discussing American Express discount fees).

[97] The market shares drop off rapidly after First Data: the second largest acquirer (Nat'l Processing) has a 13% share. But the number of significant players is impressive. In 1999 the top 87 companies processed more than $1 million of transactions per week. *See Top U.S. Acquirers*, NILSON REP., Apr. 2000 (Issue 713), at 1, 9 [hereinafter *1999 US Acquisition Data*].

[98] My sanguine views about the competitiveness of the industry are in some tension with the views of my government, which has instituted a major antitrust enforcement proceeding against Visa and MasterCard, generally arguing that they have colluded to hinder competition and innovation in the American card industry. For an overview of the case and links to significant filings, go to http://www.usdoj.gov/atr/cases/indx57.htm. For a vigorous and scholarly rebuttal of the government's claims, see Zywicki, *supra* note 27, at 110-28. In any event, the aspects of the credit-card market that I describe favorably in this paper are not aspects that the government has challenged in its action.

[99] *See* EVANS & SCHMALENSEE, *supra* note 61, at 169-73, 185-97 (discussing pressure on American Express merchant fees arising from the lower fees charged by Visa and MasterCard).

In Japan, by contrast, a merchant that wishes to accept credit cards is confronted with a market featuring a large number of clearance networks with a relatively small number of potential acquirers in each market. Most merchants that accept credit cards find it necessary to make arrangements with several of the large Japanese systems,[100] because most of those systems clear and process their own transactions. Thus, for each of those systems, the merchant faces a single system operator with which it must reach an agreement.[101] It should be no surprise if the charges in that market were higher than they are in the United States.[102]

On the other hand, that problem should be mitigated in the next few years, with the increasing tendency of all of the Japanese systems to issue cards with the Visa and MasterCard brand; cards with those brands can be cleared through any entity that is a member of those networks.[103] If competition among members of those networks lowers the rates for acquisition of transactions of those brands, the large market presence of those brands should put pressure on the discount rates for other brands in Japan just as it has in the United States.[104]

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[100] I commonly have counted on the windows of Tokyo merchants more than a dozen different credit-card networks whose cards the merchants accept, with some locations sporting more than 25 different card brands that they accept.

[101] The process works much like the process for American Express transactions in the United States, which typically are acquired and processed by the card issuer.

[102] To be sure, the limited use of credit cards by Japanese consumers provides a countervailing influence that arguably could push the discount rates down. The economics of a merchant's decision to accept a card turn on the balance between (A) increased charges (discount fees) on transactions that otherwise would have been made with cash (or some other payment system cheaper for the merchant than the credit card); and (B) the likely profit from new sales that would be gained by accepting cards. *See* EVANS & SCHMALENSEE, *supra* note 61, at 121-27. Because the limited penetration of cards in Japan means that (B) is likely to be lower in Japan than it is in the United States, a Japanese merchant's benefit from accepting a card is lower than the benefit to a corresponding American merchant; that lower benefit would tend to push discount rates downward. Thus, it seems impossible to predict that Japanese discount rates would be higher or lower than American rates. The point of the text is only that there are some market-structure reasons to support the possibility of higher rates.

[103] *See* Anonymous Interview Three, *supra* note 19.

[104] *See supra* note 99. Another possible explanation for the higher discount rates is the possibility that Japanese acquirers spend more to provide authorization terminals for their merchants. Those terminals, which are relatively expensive, ordinarily are purchased by United

One last explanation for the higher discount rates is the relatively small size of the Japanese system. If discount rates are affected by economies of scale in the development and use of information technology (as they probably are),[105] then it would be natural for the Japanese system – in which fewer consumers use their cards less frequently – to be somewhat more expensive per transaction than the American system.[106] That explanation does not necessarily suggest a long-term difference, but it does support a pattern in which Japanese rates tended to lag above slowly decreasing American rates. Although the information that I have is sketchy, that seems to be the case: industry observers and executives believe that the rates have been dropping already during the last few years.[107] Thus, higher discount rates seem unlikely to be a long-term problem for the system.

States merchants. In at least some contexts, Japanese acquirers support the costs that their merchants incur for the acquisition of those terminals. It is clear, however, that there is no universal practice of acquirers buying the terminals, so it is difficult to quantify the amount of the difference attributable to that practice. *See* Anonymous Interview Four, *supra* note 19; Anonymous Interview Seven, Tokyo (Oct. 16, 2000) [hereinafter Anonymous Interview Seven].

[105] The increasing concentration of the business of acquiring credit-card transactions over the last decade (*see 1999 US Acquisition Data*, *supra* note 97, at 9 (explaining that the top ten acquirers increased their market share from 70% in 1998 to 76% in 1999)) supports the idea that there are significant economies of scale in the development and deployment of new information technology in that realm.

[106] Another reason for the smaller size of the system is Japan's relatively restrictive market for credit information. American institutions can evaluate the creditworthiness and reliability of even the smallest businesses quickly and accurately. *See generally* Ronald J. Mann, *Information Technology and Non-Legal Sanctions in Financing Transactions*, forthcoming 54 VAND. L. REV. (May 2001) (discussing the mechanisms by which businesses are evaluated). That is much more difficult in Japan. *See eCredit.Com To Start Real-Time B2B Credit Service in Japan*, NIKKEI INDUSTRIAL DAILY, Nov. 1, 2000, *available* at http://www.nni.nikkei.co.jp (discussing the nascent state of Japanese business credit scoring); *see also supra* note 81 (discussing similar problems for consumer credit information). Thus, it is not surprising that Japanese credit-card acquirers actually exclude many merchants from their systems because of concerns about merchant character. *See* Anonymous Interview Two, *supra* note 19; Anonymous Interview Three, *supra* note 19. Such an exclusion would be almost unheard of in the United States, where the credit-card systems literally beg merchants to join and accept their cards. *See* Confrey Interview, *supra* note 30 (transcript at 4).

[107] *See*, *e.g.*, *Credit Industry White Paper*, *supra* note 69, at 14-15; Anonymous Interview Three, *supra* note 19; Anonymous Interview Four, *supra* note 19; Anonymous Interview Five, *supra* note 19; Anonymous Interview Six, *supra* note 31.

2. Fraud Rates

Another feature important to the effectiveness of a payment system is reliability: how well does it prevent unauthorized transactions? On that point, again, the raw data suggests that Japan has a problem. Specifically, the fraud rate in the United States is about 0.06% (six cents per $100).[108] In Japan, by contrast, the fraud rate was much higher, about 0.13 yen per 100 yen – ¥27 billion in 1999 in losses from fraud, of which ¥9 billion was from forged credit cards.[109] The much larger United States system had only $155 million in losses from forged cards.[110] Looking specifically to losses from forged cards, the Japanese rate of about 4.3 basis points is about three times the American rate of 1.3 basis points.[111]

One possibility I initially considered was that the high fraud is associated with the diminished statutory incentive for Japanese card issuers to prevent unauthorized transactions. As discussed above, American issuers are barred by law from shifting the risk of unauthorized transactions to their cardholders; Japanese issuers face no such constraint. It is possible, then, that the difference in legal treatment could lead to a lower level of care by the card issuer.[112] On reflection, however, that explanation does not seem plausible. For one thing, Japanese issuers in practice retain the risk of unauthorized transactions, because they purchase insurance for much of that risk and voluntarily cover most of the losses that the

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[108] *See Card Fraud in the U.S. – 1999*, NILSON REPORT, June 2000 (Issue 718) [hereinafter *1999 US Fraud Data*], at 1, 4.

[109] *See Kurejitto kādo fusei shiyō higai no hassei jyōkyō* [*Statistics on Losses from Unauthorized Credit-Card Transactions in Japan*], GEKKAN SHŌHISHA SHINYŌ [CONSUMER CREDIT MONTHLY], 2000-5, at 7, 7 [hereinafter *Japanese Credit-Card Fraud Data*]. The rate is calculated as ¥27.2 billion yen divided by ¥20.76 trillion of 1999 transactions, *see supra* note 16 and accompanying text.

[110] *See 1999 US Fraud Data*, *supra* note 108, at 4.

[111] The Japanese rate is ¥9 billion of forged credit card losses divided by ¥20.76 trillion of transactions, *see supra* note 16 and accompanying text. The American rate is calculated from *1999 US Fraud Data*, *supra* note 108, at 4, including losses from skimming, altered cards, and new counterfeit cards.

[112] *See generally* Clayton P. Gillette, *Rules, Standards, and Precautions in Payment Systems*, 82 VA. L. REV. 181 (1996) (discussing the effects of increased liability for issuers and consumers).

insurance does not cover.[113] Because they purchase that insurance from third-party insurers, it is fair to expect that the rates that they pay in the long run are affected substantially by their performance.

Moreover, it is clear that the fraud rates in both countries are not stable, as you would expect if the rates were associated with differences in the legal framework. In the United States, for example, the fraud rate has fallen by more than half in the last decade.[114] Similarly, the fraud problem in Japan is relatively recent; fraud losses in 1999 were 45% higher than they were just two years earlier in 1997, with 94% of the increase attributable to losses from forged cards.[115]

It is more plausible to attribute the losses to exploitation of short-term vulnerabilities in the Japanese system.[116] Most obviously, the Japanese system uses contemporaneous telephone authorizations much less frequently than the American system,[117] apparently because of the relatively high cost of Japanese

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[113] *See supra* notes 31-34 and accompanying text. It is possible, of course, that the cost of the insurance is effectively borne by the cardholders. I have no data by which to assess that question directly, but it seems unlikely that issuers effectively can pass *all* of that cost to their customers. *See also supra* note 31 (discussing the likelihood that issuers generally bear the losses from uninsured unauthorized transactions).

[114] *See 1999 US Fraud Data*, *supra* note 108, at 1, 4 (reporting drop in fraud losses from 16.1 cents to 6.0 cents per $100).

[115] *See Japanese Credit-Card Fraud Data*, *supra* note 109, at 7.

[116] The Japanese government apparently attributes the fraud losses to lax criminal laws and is responding in several ways. *See Lax Laws Made Japan Card-Forgery Haven*, NIKKEI WEEKLY, Apr. 24, 2000, at 4 (reporting plans to criminalize skimming and the possession of forged cards); *Govt to Crack down on Credit Card Crimes*, NIHON KEIZAI SHIMBUN, June 16, 2000 (same); *NPA Targets Credit Card Fraud*, JAPAN TIMES ONLINE, Oct. 6, 2000, *available at* http://www.newsonjapan.com (reporting plans for the National Police Agency to develop a system for analyzing fake credit cards to identify and locate professional card counterfeiters).

[117] *See* Anonymous Interview Two, *supra* note 19. The details about the use of contemporaneous authorizations are difficult to discern, because I received directly inconsistent explanations in several of my interviews. Those explanations convince me, at a minimum, that contemporaneous authorizations are not as ubiquitous in Japan as they are in the United States. As a rule of thumb, it appears that until very recently many merchants were not doing contemporaneous on-line authorizations for transactions below ¥10,000 (about $90 dollars). *See* Anonymous Interview One, *supra* note 19; Anonymous Interview Two, *supra* note 19; Anonymous Interview Four, *supra* note 19; Anonymous Interview Five, *supra* note 19. That ¥10,000 limit itself was implemented only in 1999, before which that floor had been ¥30,000.

telecommunications.[118] Without those authorizations, the potential for fraud is much higher, because the system has no practical way to identify a card that bears a valid number, even if the magnetic stripe fails to include the information that would appear on a legitimate card.[119]

But it is most implausible to regard that difficulty as a permanent feature of the system. It is unlikely that Japanese issuers and merchants will tolerate for long substantial losses from fraud that easily could be eradicated by simple authorization procedures that are standard operating practice in the United States. Thus, it is not surprising that the industry already is implementing responses that target that problem: industry sources explain that as of late 2000 or 2001 most department stores[120] and hotels in Japan will process transactions without any floor at all –

Moreover, for several categories of merchants (such as hotels, airports, and hospitals), the floors historically have been much higher, in the range of ¥180,000-300,000. *See* Anonymous Interview Five, *supra* note 19. One large bank-card issuer told me that about 30% of its transactions are not authorized because they fall below the floors. *See* Anonymous Interview Five, *supra* note 19.

[118] The relatively high cost of telephone service in Japan is well known. *See*, *e.g.*, KATZ, *supra* note 49, at 35 (discussing reasons for relatively high telecommunications costs in Japan); Mark Magnier, *Japan's Big Hang-Up*, LOS ANGELES TIMES, June 4, 2000, at C1, *available at* 2000 WL 2247206 (arguing that Japanese telephone interconnection charges are about 4 times those in the U.S. and Britain and 2.5 times those in France and Sweden); *Japanese Government Panel Urges End to NTT Stranglehold*, AGENCE FRANCE-PRESSE, Aug. 17, 2000, *available at* 2000 WL 24691668 (noting that local charges in Japan (for which NTT has a monopoly) have *risen* by 13 percent since 1985, while long-distance charges (for which NTT faces competition) have fallen by 78%). Those high costs contribute to the high floors by making it difficult to persuade merchants to accept the costs of more frequent authorizations associated with lower floors. Although my interviews produced conflicting views on the point, more than one source argued that high telecommunication costs also contribute to a persistent merchant practice of failing to authorize transactions above the floors, based on the (not entirely implausible) view of the merchant that the cost of the authorization exceeds the potential fraud savings from the authorization.

[119] *See* MANN, *supra* note 36, at 113-14 (discussing the importance of contemporaneous transaction authorization).

[120] The rapid change is evident from anecdotal discussions of department stores in my interviews. Several different interview subjects reported to me the view that the rise in fraud was attributable generally to the vulnerability of Japanese department stores, specifically to their general failure to conduct sufficiently frequent telephone authorizations. Many observers believe that organized crime targeted department stores because of that vulnerability. The most reliable data I have found, however, suggests that department stores during 1999 in fact were

seeking online authorizations for all transactions regardless of size.[121] Another response that seems to be appearing in the market already is an increasing tendency for large store-related issuers to adopt the Visa and MasterCard brands.[122] Use of those brands gives the issuers access to all of the anti-fraud technology that has been effective in the United States.[123]

But no technological advance can solve the problem entirely. Even contemporaneous authorizations are to some degree vulnerable to sophisticated cards created by skimmers (who obtain not only the card-account number, but also the other information on the magnetic stripe of the legitimate card). The only existing defense against those cards is the relatively vulnerable capacity of issuer-based expert computer systems to detect questionable patterns in the usage of cards.[124] And to some degree Japan's high fraud rate is caused by two unfortunate features

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relatively impervious to fraud. In the portfolio of one large credit-card issuer, department-store transactions accounted for less than 10% of 1999 fraud, although those transactions generally are 20-25% of volume. If there is a problem sector, it clearly is the electronics shop, which accounted for about 20% of 1999 fraud and (based on mid-year statistics), about 33% of 2000 fraud. *See* Anonymous Interview Four, *supra* note 19; *see also* Anonymous Interview Five, *supra* note 19 (suggesting that problems with department stores are being solved). Smaller, but less tractable, problems are in the gasoline and highway-toll sectors, for which it is not economically practicable to have authorization terminals at each payment location. *See* Anonymous Interview Six, *supra* note 31 (discussing problems at gasoline stations and highway-toll facilities); Anonymous Interview Four, *supra* note 19 (reporting that 10% of fraud in one large credit-card portfolio occurs at gasoline stations).

[121] *See* Anonymous Interview Seven, *supra* note 104.

[122] *See* Anonymous Interview Three, *supra* note 19. My particular emphasis on the activity of department stores is supported by brochures that I collected from department stores in Tokyo in the fall of 2000. Those brochures included, among others, Credit Saison (the largest store-related card issuer in Japan and the third largest issuer overall) and Mitsukoshi, one of the oldest and most prestigious Japanese department stores. Although it would have been valuable to my research, I was unable to interview a card executive at a Japanese department store.

[123] For example, my anecdotal impression (based on examining cards while I have been in Japan) is that many cards issued by indigenous Japanese issuers do not include the indented printing and multi-color signature tape that hinder forgery of standard Visa and MasterCard products. Japanese-issued Visa and MasterCard products in those respects are (at least to the naked eye) indistinguishable from the American products.

[124] *See* MANN, *supra* note 36, at 111-12.

that make it a likely target for such attacks: the high telecommunication costs that continue to deter merchants from consistent authorization of transactions[125] and its proximity to the locations where the most sophisticated card forgers seem to reside.[126] To the extent those features are ineradicable, the Japanese credit-card industry will continue to endure fraud losses somewhat higher than those in the United States.

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In the end, the two systems operate quite differently, in markets of different sizes with different constraints on the players, facing a customer base that arguably has a significantly different taste for the credit card. Thus, I finish my analysis not the least bit surprised by the many differences in the way the cards function in the two countries. If anything, it is surprising that the results are as similar as they are.

III. DEBIT CARDS IN THE UNITED STATES AND JAPAN

Credit cards, of course, are not the only card-based payment system. In the last few years, the use of debit cards has grown rapidly, especially in the United States.[127] A debit card is physically quite similar to a standard credit card: a piece of plastic of the same dimensions, with a magnetic stripe on the back. That stripe, like the stripe on the credit card, includes the account number and other information (not known to the cardholder); that secret information is designed to verify transactions in which the card is swiped at a card-reader. The defining difference from a credit card is that the debit card necessarily is tied to a particular bank account.[128] Thus, funds for transactions that use the card are withdrawn from the account in one to two business days.[129] Most importantly, the funds are withdrawn from the account

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[125] *See supra* note 118 (discussing high telecommunications costs).

[126] *See* Anonymous Interview Seven, *supra* note 104.

[127] *See infra* notes 150-151 and accompanying text.

[128] *See* MANN, *supra* note 36, at 141-46.

[129] *See* MANN, *supra* note 36, at 144-46 (discussing United States collection practices). In Japan, the funds are removed from the cardholder's account immediately, but usually not

without further action by the cardholder. A corollary of that aspect of the cards is that debit-card transactions require some form of on-line connection: the merchant does not accept the card for payment until the merchant can verify with the issuer that the issuer will remove funds from the cardholder's account to pay for the transaction.[130]

The discussion of debit cards proceeds along the same lines as the discussion of credit cards. This Part starts by discussing the differing patterns of usage and then differences in legal treatment. It then turns to the most obvious question about Japanese debit cards: why they have arrived so late. It closes with a tentative discussion of the effectiveness of the still-nascent Japanese debit-card system.

A. USAGE IN THE UNITED STATES AND JAPAN

Given the large structural differences between Japan's cash-centered retail payment systems and the United States' check- and card-centered systems, it is not at all surprising that cardholders in the two countries use debit cards quite differently. In the United States, debit cards are used for about 5% of all retail payment transactions.[131] Because the data from which that figure is derived include payments sent through the mail (or made electronically) – payments for which debit-card usage is quite rare – it substantially understates the debit card's share of payments made at the point of sale. Looking solely to retail purchase transactions, the debit card was

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received by the merchant until at least the third business day. *See* Nihon debitto kādo torihiki suishin kyōgikai hōmuiinkai [Legal Committee, Japan Debit Card Promotion Association], *Debitto kādo no shikumi oyobi sono hōteki wakugumi no gaiyō (1)* [*The structure and legal framework of J-Debit (1)*], 1573 KINY`Ū HŌMU 12, 13-14 (2000); Kādo mākettingu kenkyūkai [Society for the Study of Card Marketing], Debitto kādo dōnyū katsuyō no tebiki Q & A [Q & A 100, Information about Debit Cards] qu. 27 (1999) [hereinafter DEBIT CARD Q & A].

[130] *See* MANN, *supra* note 36, at 144-46 (discussing United States collection practices). For Japanese practices, see Article 2 of the model cardholder agreement [hereinafter J-Debit Cardholder Agreement] published at Nihon debitto kādo suishin kyōgikai hōmu iinkai [Legal Committee, Japan Debit Card Promotion Association], *Debitto kādo no shikumi oyobi sono hōteki wakugumi no gaiyō (5)* [*The structure and legal framework of J-Debit (5)*], 1583 KIN`YŪ HŌMU 48-53 (2000) (reprinting a model cardholder agreement.).

[131] *See 1998 US Payment Systems Data*, *supra* note 9, at 6.

used in about 32% of all card-based transactions.[132] Even though the debit-card transactions tend to be relatively small, about $36, as opposed to $76 for the average retail credit-card transaction,[133] they still accounted for 15% of the total transaction volume at the point of sale (with industry sources estimating that they will account for one-third of that volume by 2010).[134]

In Japan, by contrast, debit cards are used much more rarely (no surprise given their very recent introduction). Specifically, they were used in September 2000 (the last month for which statistics are available) for just over 300,000 transactions, about one-half of one percent of all card-based transactions.[135] It is interesting that the average debit-card transaction – contrary to U.S. usage – is significantly larger than the average credit-card transaction: about ¥40,000 for the debit-card transaction, as compared to ¥25,000 for the average credit-card transaction.[136]

The ¥40,000 figure is somewhat misleading, because it reflects a relatively small number of large securities transactions. News reports from *Nihon Keizai Shimbun* suggest that securities transactions averaging about ¥1,000,000 are about a third of all J-Debit transactions.[137] Even if that figure seems exaggerated, it is clear

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[132] *See 1999 US Card Data*, *supra* note 8, at 1, 5. General-purpose cards are cards that can be used at merchants generally, as opposed to proprietary cards, which can be used only at the store that issued them. Because proprietary cards have a relatively small share of the United States market, data that excludes them is not seriously misleading.

[133] *See 1999 US Card Data*, *supra* note 8, at 7.

[134] *See 1999 US Card Data*, *supra* note 8, at 6.

[135] I rely on statistics published on the J-Debit home page at http://www.debitcard.gr.jp. {The specific URL is http://211.2.244.164/download/48767089/200011_Report.xls.} [hereinafter *J-Debit Home Page*].

[136] *See J-Debit Home Page*, *supra* note 135. The figure in the text is the average transaction amount over the entire year. That amount should be taken loosely, because it has varied considerably since March (when the full-scale program began), ranging from a high in June of 50,303 to a low in September of 41,230.

[137] *See Kokusai To Take Debit Cards for Securities Trades*, NIKKEI WEEKLY, July 10, 2000, at 16 (reporting that securities trades are 30% of nationwide debit-card usage and that the average transaction amount at two leading brokers (Nomura and Daiwa) is about ¥1,000,000).

that the securities transactions are large and pull the average-transaction size up significantly.[138] Another large component of the transactions are relatively large transactions at electronics stores, doubtless driven by merchant desire to save money on credit-card transaction fees as well as their desire to mitigate the risk of fraud.[139]

But even putting those unusually large transactions to one side, the average transaction would be in the range of ¥24,000 (about $220),[140] much larger than the average American debit-card transaction. That is easy to understand as a function of the Japanese practice of carrying larger amounts of cash than is customary in the United States[141]: the smaller transactions for which the debit card is used in the United States are still handled with cash in Japan.

B. LEGAL DIFFERENCES

As with credit cards, the two countries also have quite different legal protections for cardholders. First, the United States provides protection against unauthorized transactions that is quite similar to the protection it provides credit-cardholders. Thus, a debit-cardholder cannot be forced to pay more than $50 for unauthorized transactions that are made with the card. That is true notwithstanding any contrary agreement that the cardholder might have with the bank. The only

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[138] The only published data from J-Debit (which covers March, the first month of the full-scale system) suggests that securities transactions amount to only 1.5% of the transactions, and that the average amount of those transactions was ¥822,400. *See* Nihon debitto kādo suishin kyōgikai [Japan Debit-Card Promotion Association], *Dai ni fēzu honkaku tenkai kara 1 kagetu debitto kādo no riyā ga ōhaba appu* [*The Number of Payments Through J-Debit has Significantly Risen Since the Start of the 2nd Phase*], CARDWAVE, June 2000 [hereinafter *J-Debit Transaction Breakdown Statistics*], at 52.

[139] Electronics dealers might have the largest incentive to urge customers to use debit cards because they probably have one of the highest average transaction amounts of any high-volume merchant in Japan. Those shops also might be driven by a high rate of fraudulent transaction on credit cards at their store and a desire to limit their potential exposure in those transactions. *See supra* note 120 (discussing problems with credit-card fraud at electronics stores). J-Debit statistics from March 2000 report that transactions at electronics stores were 34% of all transactions and that they had an average amount of ¥53,100. *See J-Debit Transaction Breakdown Statistics*, *supra* note 138, at 52.

[140] Calculated from *J-Debit Transaction Breakdown Statistics*, *supra* note 138, at 52.

[141] *See supra* notes 1 & 5 and accompanying text.

exception is a special rule that permits the $50 figure to increase if the cardholder does not promptly advise the issuer of the card when the cardholder learns that the card has been stolen.[142] The United States does not, however, provide any right for the cardholder to interpose defenses to payment against the issuer. Thus, as with cash, debit-card payments are final when made.[143]

In Japan, by contrast, there is no protection for debit-cardholders on either point. First, it has been settled by a decision of Japan's Supreme Court that an ATM-cardholder can be required to pay for unauthorized transactions.[144] And the fact that such a case exists is evidence that banks are willing to charge customers for at least some of their unauthorized transactions (something generally forbidden in the United States). Given the structural parallels between debit-card transactions and ATM-card transactions (both use the same card and have the same interaction between the cardholder and the bank), it seems likely that the same rule will apply to J-Debit transactions. A few banks have started programs in which cardholders can obtain insurance,[145] but it is by no means universal (as it is with credit cards),[146] nor is it clear that even those banks will provide the insurance to all cardholders. Thus,

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[142] *See* 15 U.S.C. § 1693g, Electronic Funds Transfer Act § 909 (limiting liability of debit-card holder for unauthorized transactions to $50, unless the cardholder fails to report either the theft of the card or unauthorized transactions that appear on the cardholder's statement); Regulation E, 12 CFR § 205.6. *See generally* MANN, *supra* note 36, at 148-53.

[143] *See* MANN, *supra* note 36, at 144-47.

[144] Aoki v K. K. Fujibank, 1369 KINY`Ū HŌMU 6-8 (Sup. Ct., July 19, 1993) (upholding a provision of an ATM-card agreement, holding that absent some special circumstance a bank is not responsible when somebody other than the cardholder withdraws cash from an ATM with the authentic card and correct PIN).

[145] *See Fuji Bank, Asahi Bank To Offer Insurance for Bank-Card Fraud*, NIKKEI WEEKLY, Nov. 8, 1999, at 15 (discussing plans for debit-card theft insurance); *Regional Banks To Insure Losses on Counterfeit Debit Cards*, NIKKEI INDUSTRIAL DAILY, Aug. 23, 2000, *available at* http://www.nni.nikkei.co.jp; Yōgo Itō, *Genkō sukīmu ga tsuzuku kagiri wa mondai sanseki no J-debitto* [*A Pile of Problems with J-Debit Unless the Current J-Debit System Is Improved*], GEKKAN SHŌHISHA SHINYŌ [CONSUMER CREDIT MONTHLY], 2000-4, at 22, 22-23 (discussing insurance that Fuji Bank and Asahi Bank offer for their cardholders, and general insurance that Daiwa bank offers for all cardholders, but pointing out that none of the insurance protects against losses from forged cards).

[146] *See supra* notes 32-34 and accompanying text.

it is likely that Japanese cardholders will bear a significant portion of the risk of unauthorized transactions.

Finally, Japan, like the United States, treats a debit-card transaction as a cash payment that is final when made.[147] In other words, even if the cardholder has a defense that would be valid against the merchant (based on some defect in the merchant's goods or services), that defense is not valid against the bank's claim for payment on the transaction. The debit-cardholder has no recourse except to raise the point with the merchant.[148]

C. THE LATE ARRIVAL OF THE SYSTEM

The most obvious question to ask about Japanese debit cards is why they have arrived so late: it is strange to see a payment system used for about a quarter of all card-based retail transactions in the United States being introduced to Japan on a general basis in the spring of 2000.[149] But in the end it seems not at all surprising.

For one thing, the American debit card, albeit successful, has not itself been in use for very long. Although they first were designed in the 1960's,[150] debit cards gained a significant market share only in the mid 1990's (just four or five years

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[147] *See* J-Debit Cardholder Agreement, *supra* note 130, arts. 3 & 4.

[148] *See* J-Debit Cardholder Agreement, *supra* note 130, art 4. It is possible that cardholders could challenge the validity of an agreement that does not allow the cardholder to present the defense against the bank. *See* Hiroshi Hori et al., *Kigyō•Shohisha kan (B to C) no denshiteki kessai to gen'in kankei* [*Legal analysis of B to C electronic payment and causal transactions*], 1597 KIN`YŪ HŌMU 55, 58-61(2000) (presenting the view that the benefits to the consumer of immediate settlement and the importance of the elimination of default risk render such an agreement valid even under Shōhisha keiyakuhō [Consumer Contract Act], Law No. 61 of 2000, which will be effective from April 2001).

[149] A debit-card system called Bank-POS was introduced in Japan in 1984, but remained only as a local, barely used system partly because of regulations requiring prior written agreement for the transactions. The key event for the development of J-Debit was the lifting of such restrictions in 1998. *See* Japanese Bankers Association, *supra* note 1, at 19.

[150] *See* D. BAKER ET AL., THE LAW OF ELECTRONIC FUND TRANSFER SYSTEMS: LEGAL AND STRATEGIC PLANNING ¶ 7.02 (rev. ed. 1999) (discussing the early history of the use of the debit card at retail locations).

ago).[151] The key event was a fall in the cost of PIN-pad point-of-sale terminals that made it practicable for merchants to purchase the terminals.[152]

But even if the delay had been longer, it would be easy to explain, because neither of the two main market functions that the debit card serves in the United States present market opportunities as promising in Japan as they are in the United States. First (speaking as an American debit-cardholder), one of the primary roles of the American debit card is to accommodate the relatively limited willingness of American consumers to carry cash. To the extent they have a rational reason to use a debit card in preference to a credit card, American consumers use a debit card because it limits the frequency with which they must go to an ATM machine or bank to obtain cash. Indeed, the debit card itself for many of us might be the most convenient source of cash, because most merchants that accept debit cards at the point of sale allow cardholders to use the card to withdraw cash in connection with the purchase.[153] Because those transactions carry no fees at all for the cardholder, they are attractive to consumers. Japanese consumers, however, tend to carry more cash than American consumers.[154] Thus, their need to use a card for small-dollar purchases is much smaller. Hence, the market need for a debit card in Japan is much smaller.[155]

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[151] *See* EVANS & SCHMALENSEE*, supra* note 61, at 298-300.

[152] *See* EVANS & SCHMALENSEE*, supra* note 61, at 306-15.

[153] Because debit cards are so much cheaper for merchants than credit cards, it is rational for the merchants to permit cash withdrawals, even if those withdrawals increase the fees the merchants must pay to the bank for the transaction. Setting to the side the cost to the merchant of having the cash on hand (which seems unlikely to be large enough to alter the decision significantly), that would be true until the point at which the cash withdrawals increase the total discount fee to an amount greater than the discount fee would have been for a credit-card transaction. Because PIN-based debit cards often have fixed discount fees per transaction, it makes particularly good sense for merchants that accept those cards to use "cash-back" services as a way to promote debit-card use.

[154] *See supra* notes 1 & 5 and accompanying text.

[155] The relatively large size of the Japanese debit-card transaction supports this view of a market for debit-card usage, in which cash is used for the low-value transactions for which the card is commonly used in the American market.

The second market role that the debit card plays in the United States is that it allows cardholders the quasi-rational convenience of a card without the risky temptation of overextending themselves with credit purchases. But Japanese consumers do not need a debit card to have that comfort. They get it with standard Japanese credit-card transactions by accepting ikkai barai as the method of payment. As explained above,[156] when a cardholder pays by ikkai barai (as the overwhelming majority of Japanese cardholders do), the funds for the transaction are removed from the bank account without further action by the cardholder. Thus, the ikkai-barai card does not present nearly the same temptations to borrowing as the American credit card.

The only real differences that a debit card brings to Japanese consumers are that (a) the on-line PIN-based authorization makes the transactions safer (at least compared to credit-card transactions); and (b) the funds are removed from the account much more rapidly. Neither of those differences benefits cardholders significantly, so neither is likely to push consumers toward the card rapidly. Moreover the greater risk of real loss to the consumer from loss of the card could be a significant drag on consumer willingness to carry the card.

That leads to the counterintuitive conclusion that Japanese cardholders are likely to move to the debit card more slowly than American consumers, even though it is closer than the credit card to their preferred (cash) method of payment. To put it another way, the development of the Japanese payment system with a credit-card feature before a debit-card feature has led to a path-dependent result that makes it harder for the debit card to gain a major role in the system now than it would have been if the debit card could have been introduced years ago.

D. The Effectiveness of the System

The Japanese debit-card system is so young that it is speculative to offer any firm analysis of its effectiveness. But enough information is available from the

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[156] *See supra* notes 19-27 and accompanying text.

general structure to support generally positive inferences about its future performance.

1. Discount Rates

For now, at least, the Japanese system is considerably more expensive for the participants in the transactions than the American system. Although rates differ considerably from merchant to merchant, a typical merchant would pay at least ¥50 on a ¥5,000 transaction.[157] In the United States, a grocery store with a similar transaction probably would pay the equivalent of ¥15-20.[158]

Although the fee for now is higher than the analogous fees in the United States, it seems unlikely to be a substantial problem. For one thing, even though the fee is higher than the analogous U.S. fee, it still is lower than the fee for any competing Japanese payment system.[159] For another, the rates have not yet

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[157] *See* DEBIT CARD Q & A, *supra* note 129, qu. 54 (explaining that the discount rate varies based on negotiations between the acquiring bank and the merchant, and that it typically ranges from 1-3%). As a matter of structure, the discount fee that the acquiring bank collects from the merchant must be more than the interchange fee that the acquiring bank pays to the issuing bank. *See supra* note 92 (discussing relation between merchant discount fees and interchange fees in the credit-card context). In the J-Debit system, the interchange fee currently is 1%, with a floor of 3 yen and a ceiling of 100 yen. *See id.*

[158] *See* Miriam Kreinin Souccar, *Despite Merchants, Off-Line Debit Taking Off*, AM. BANKER, June 9, 1999, *available at* 1999 WL 6036025.

[159] The fee is cognizably lower than the fee for a bank transfer, the other common method of non-cash consumer payment in Japan. {It is difficult to generalize about bank-transfer fees, because the fee structures typically have several tiers and differ from bank to bank. The cheapest fees for transfers to an account at a different bank, however, typically exceed ¥100. *See* http://www.btm.co.jp/list_j/tesuu.htm (fees for Tokyo-Mitsubishi Bank); http://www.fujibank.co.jp/jis/fb/service/tesuuryou.html (fees for Fujibank).} For comparison's sake, the fee is considerably lower than the fees that Visa and MasterCard acquirers charge in the United States for their PIN-less debit-card products. Those higher fees have disturbed American merchants, but have not stopped the rapid spread of use of the cards. *See* Lisa Fickensher, *Visa Hires Exec To Strengthen Relationships with Merchants*, AM. BANKER, Mar. 12, 1999, at 8 (discussing a lawsuit brought by a group of merchants including Wal-Mart and Sears, against MasterCard and Visa, challenging the rules requiring merchants to accept the PIN-less debit-card products issued by MasterCard and Visa members).

stabilized during the short life of the system; one observer suggested that the rates are lower now than they were in the initial months of the system.[160]

Finally, the structure of the market should foster considerable competition that eventually should lead to good rates. The key point is that there is only one debit-card network for the whole country and each merchant needs access to that network from only a single bank. That is the same many-acquirers/few-networks pattern that United States merchants face when they want access to credit-card networks.[161] Thus, all of the banks in Japan that want to be in the business of capturing J-Debit transactions must compete for the business of each merchant.

To be sure, long-term merchant/bank relationships might give merchants a significant preference for a particular bank within their corporate family. But those relationships in the Japanese financial industry seem to be weakening rapidly.[162] At this point, it is difficult to believe that those relationships will be sufficiently strong to permit banks to charge uncompetitive rates to related-company merchants for their debit transactions. If one bank charges significantly better rates for the service than its competitors, it is highly likely to obtain a substantial share of the market.[163] Thus, it seems unlikely that high system costs will pose an obstacle to the success of the system.

2. Fraud rates

On the issue of fraud, the Japanese system might not be perfect, but it seems to be much safer than the American system. A large share (more than two-thirds by value) of American transactions use the PIN-less Visa and MasterCard debit

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[160] *See* Anonymous Interview Eight, Tokyo (Sept. 28, 2000).

[161] *See supra* notes 97-98 and accompanying text.

[162] *See* HARMER, *supra* note 54, at 142-43.

[163] *See Debitto kādo kamei kigyō kessai, daiichi kangyō gin 5 wari kyō* [*Dai-Ichi Bank Has Acquired More Than 50% of J-Debit Business*], NIHON KEIZAI SHIMBUN, Oct. 19, 2000, at 1, 1 (reporting that Dai-Ichi Kangyo Bank has succeeded in becoming an acquiring bank for more than half of the merchants in the J-Debit program).

products.[164] For those cards, the fraud losses seem to be about the same as they are for regular credit cards (six cents per hundred dollars).[165] For conventional PIN-based debit cards, however, the fraud rate is much smaller, a twentieth as big (0.3 cents per hundred dollars).[166]

In the J-Debit system, by contrast, all transactions are PIN-based.[167] Thus, you would expect the fraud rate to be somewhere near the American fraud rate of only 0.3 cents per hundred dollars. And early results suggest that fraud is not yet a serious problem.[168] To be sure, there are a few causes for concern. The problem is that the Japanese banking system traditionally has not used encryption for PIN-number transmissions because all ATM machines have been in secure locations (generally inside bank locations). Thus, unlike the United States, the use of debit cards at the point of sale is the first time that cards giving access to a bank account have used terminals that access the bank's computers over an open network.[169] It is thus the first occasion at which the use of encryption has been crucial to safety of the system. Still, although it necessarily is difficult to evaluate the security of the system from the outside, the available information suggests that J-Debit is conscious of the need for reliable encryption.[170]

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[164] *See 1999 US Card Data*, *supra* note 8, at 7.

[165] *See 1999 US Fraud Data*, *supra* note 108, at 4 (aggregating fraud rates for credit cards and PIN-less cards).

[166] *See 1999 US Fraud Data*, *supra* note 108, at 4.

[167] *See* J-Debit Cardholder Agreement, *supra* note 130, art. 2.

[168] As of October, J-Debit still reports no claims of unauthorized transactions in its system. *See Debit Card Usage Exceeds 100 Bln Yen in Jan-Oct*, NIHON KEIZAI SHIMBUN, Nov. 13, 2000, *available at* http://www.nni.nikkei.co.jp [hereinafter *Debit Card Usage*].

[169] *See* Naoyuki Iwashita, *Business Needs for Cryptographic Technology in Japan's Financial Industry* http://www.imes.boj.or.jp/japanese/kouen/h9903.pdf (discussing use of leased lines for ATM-card transactions in Japan).

[170] It appears that J-Debit contemplates encryption of transmissions from the merchant to the clearance center by the same DES encryption used in the United States. *See* Japan Settlement Information Center, Ltd. http://www.jpsic.co.jp/servis2.html; Iwashita, *supra* note 169, at 1 (discussing use of DES encryption for United States PIN transmissions).

Observers also worry that PINs in Japan are not as secure as PINs in the United States, relying on surveys indicating that about 1/3 of Japanese use their birthdays as their PIN numbers.[171] That could be something of a problem if a significant number of debit cards are stolen. Still, that seems such an easy problem to fix that it is difficult to believe that the system operators would allow it to become a significant problem. For example, a system in which banks assign the PINs (as often happens in the United States) would solve much of the problem immediately.

The fact is, the United States systems that have used PINs for years have experienced very low rates of losses compared to card systems that do not use PINs. And even those rates seem misleading, because, according to industry observers, the losses are almost entirely attributable to so-called "friendly" fraud: unauthorized transactions by individuals (spouses, children, paramours) to whom the cardholders voluntarily delivered the card and PIN.[172] It seems surprising, but there appear in the United States to be no quantifiable number of transactions in which interlopers have managed to steal both a card and a PIN and successfully conduct transactions before the cardholder advises its bank of the theft. For me, the lesson of that experience is that Japan's entirely PIN-based system should be quite secure.

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It is much harder to draw firm conclusions about the Japanese debit-card system than the Japanese credit-card system, because its baseline of operation is so short. But its major problem seems to be that much of its market niche has been occupied by the general mutation of the credit card in Japan into something that closely resembles the debit card in the United States. Thus, although the system is much cheaper for the parties to transactions, much more secure, and much more

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[171] *See Debit Cards Getting Ready*, *supra* note 90, at 15 ("Critics also warn that personal identification codes can be stolen while being punched in at the store.").

[172] *Compare* Kono v. Otsuyama, 1048 HANREI JIHŌ 109 (Tokyo High Ct. Apr. 28, 1982) (concluding that a man who gave his cash card to a woman with whom he had a romantic relationship implicitly consented to her withdrawal of funds with the card in any amount that suited her).

accommodating to any Japanese preferences for transactions that resemble "cash payment" and avoid any hint of borrowing, it seems to have a relatively limited chance of broad success in Japan. Absent any strong reason for consumers to use the card – and no such reason seems apparent at this point – it may languish as a relatively minor system, as it did in the United States for so many years.[173]

IV. PAYMENTS ON THE INTERNET

The future of payments obviously holds more than the insular development of the credit-card and debit-card systems. It is likely that the years to come will involve a shift of a significant portion of retail activity to electronic commerce over the internet (or its successors). It is fair to ask whether the credit card or the debit card will play a significant role in that commerce. The question is particularly important in Japan, because its existing market is relatively small and has a completely different payment pattern from the much larger U.S. internet market. Specifically, the U.S. internet payments market is dominated by credit cards: about 93% of U.S. internet retail transactions are paid for with credit cards.[174] In Japan, by contrast, online credit-card payments are used in only 19% of the transactions.[175]

Japan's limited use of credit cards in its e-payment system is part of a system that poses significant difficulties for the development of E-commerce as a strong competitor to traditional (brick-and-mortar) commercial distribution channels.[176] In

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[173] *See supra* note 150 and accompanying text.

[174] *See Graphiti: The New Colors of Money for Online Transactions*, RED HERRING, Oct. 2000, at 78. Those statistics do not distinguish between online and offline credit-card payments, but it seems likely that almost all of the payments are made online. As the following pages make clear, that is not because the credit-card system is perfect. It is more because in the United States it is the only practicable way for a customer to provide immediate payment to a merchant and thus the simplest way to make a merchant comfortable in providing immediate shipment. That is not so clearly true in Japan, where consumers conceivably can (and sometimes do) make such payments by bank transfers.

[175] *See* Nihon tsūshin hanbai kyōkai [Japan Direct Marketing Association], *Tsūshin hanbai toraburu no jyōhōshūshū bunseki ni kansuru chousa kenkyū hōkokusho* [*Report Analyzing Troubles in Distance Selling*] (1999) [hereinafter *JDMA Data*].

[176] At least one observer attributes the relatively limited use of credit cards to Japanese being "especially reluctant to give out credit-card information over the Internet." *See* Makoto

retail commerce, Japan's reliance on devices other than the credit card is not problematic for the merchant, because the substitute devices provide payment just as good as the credit card. In E-commerce, however, that is not true: the substitute Japanese payment methods are from the merchant's perspective distinctly inferior, because they tend to be either less convenient to the consumer or because they provide deferred payment to the merchant.

The first point is convenience. A large part of the attraction of E-commerce is convenience and speed: the transaction is complete when the customer contacts the merchant's website, decides to purchase, and places the order.[177] The alternative payment methods inevitably hinder that process. In the case of any payment method that is not online (currently, any method other than the 22% of payments made by credit cards and electronic money),[178] they slow the process because even for advance-payment transactions the time at which the transaction is processed and shipping begins must wait until the consumer makes payment. That is inconvenient not only because of the delay, but also because it requires the consumer to take two separate actions to complete the transaction, a hassle that the brick-and-mortar retail customer does not face.

Sato, *Would-Be Net Banks Jockey for Position*, NIKKEI WEEKLY, May 8, 2000, at 12; *see also* NTT DoCoMo To Offer Secure Payment System for I-Mode Users, NIHON KEIZAI SHIMBUN, Nov. 5, 2000, *available at* http://www.nni.nikkei.co.jp (suggesting that "[m]obile phone-based online sales have been limited until now because of safety concerns about making payments via the net"). That view is difficult to assess, but it seems more likely to me that the cause is the relatively limited penetration of the credit card into the Japanese market, *see supra* note 17, coupled with its higher than normal discount rates, *see supra* pp. 23-27, and telecommunication costs, *see supra* note 118 (all of which would make it relatively unattractive to internet merchants). *See Internet Payments in Asia/Pacific*, NILSON REP., Feb. 2000 (Issue 709), at 1, 10 (discussing the reasons for limited card use on internet transactions in the Asia/Pacific region).

[177] *See* Bob Tedeschi, *Web Merchants Make Good on Hype*, N.Y. TIMES, Oct. 30, 2000, *available at* http://www.nytimes.com/2000/10/30/technology/30ECOMMERCE.html (describing the importance of convenience of web sites to successful internet merchants).

[178] *See JDMA Data*, *supra* note 175. It is not clear how the electronic-money payments in question were made.

The deferred-payment problem is more serious: statistics suggest that more than half (57%) of Japanese internet transactions involve deferred payment, while only a little more than a third (39%) provide advance payment.[179] Transactions with deferred payment are significantly less profitable than transactions with immediate payment because they extend the length of time that a merchant must have an item in its inventory before it receives payment for the item. Again, that poses a significant competitive disadvantage to the e-retailer. To understand the gravity of the problem, consider a merchant with an inventory turn of 15 days: if that merchant's payments are delayed by five days, its financing costs increase by a third, because it must finance the items for 20 days rather than 15. The brick-and-mortar merchants against whom e-retailers compete typically receive immediate payment, before releasing the goods to the purchaser.[180]

Hence, if Japanese E-commerce is to compete successfully against conventional commerce,[181] the system should implement more effective payment mechanisms. The question is whether Japan should follow the lead of existing commerce, and shift its payment mechanisms to the credit card, or instead should strike out on a different path.

Of course, there are good reasons to think that neither of the card-based systems discussed in the first two parts of this paper is a good model. For one thing,

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[179] The delayed payments are 19% collect on delivery, 19% postal transfer after transaction, 9% off-line credit card, 7% bank transfer after transaction, and 3% payment at convenience store. The contemporaneous payments are 19% credit cards online, 12% bank transfer before transaction, 5% postal transfer before transaction, and 3% electronic payment. *See JDMA Data*, *supra* note 175 .

[180] For the time being that timing problem might be quite minor in Japan, given its near-zero interest rates. Moreover, even in the longer run (when interest rates presumably will rise somewhat), the relative disadvantage of internet merchants as compared to conventional merchants is mitigated by the common practice under which merchants normally receive payment for their transactions from their acquirer only twice a month. *See*, *e.g.*, Anonymous Interview Two, *supra* note 19; Anonymous Interview Three, *supra* note 19; Anonymous Interview Five, *supra* note 19.

[181] *Nihon Keizai Shimbun* estimates that Japanese E-commerce will rise 228.7% to about 50 billion yen during 2000. *See Online Businesses Gaining Sales Momentum*, NIKKEI WEEKLY, July 17, 2000, at 3.

neither is particularly well suited for "micropayments," small payments usually made for information such as news stories or musical selections.[182] For another, both of those systems allow the issuers and merchants to collect extensive information about the purchasing habits of cardholders; dissemination of that information could infringe substantially on the privacy of the cardholders.

For a time, many observers thought those problems would lead to the development of an entirely new electronic-money system for electronic transactions.[183] It seems likely, however, that both of those problems can be solved without such a radical step. First, the privacy problem can be – and in many countries already has been – attacked directly by regulations that bar card issuers from disseminating the information in question.[184] It may be that the United States has not adopted such regulations.[185] That does not prove, however, that regulatory protection is impossible, only that significant countervailing interests make

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[182] *See* MANN, *supra* note 36, at 271-72; *Micro Bank Card Payments*, NILSON REP., Sept. 2000 (Issue 723) [hereinafter *Micro Payments*], at 1, 9-10.

[183] *See*, *e.g.*, MANN, *supra* note 36, at 270-72 (discussing that perspective).

[184] See, e.g., Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data, available at http://europa.eu.int/eur-lex/en/lif/dat/1995/en_395L0046.html.

[185] *See*, *e.g.*, PETER P. SWIRE & ROBERT E. LITAN, NONE OF YOUR BUSINESS: WORLD DATA FLOWS, ELECTRONIC COMMERCE, AND THE EUROPEAN PRIVACY DIRECTIVE (1998) (analyzing the difficulties of implementing the European Privacy Directive in the U.S. economy). Recent scandals, however, might change the U.S. attitude. *See* Rod Blackwell & Eileen Canning, *Card Data Porn Scandal Raw Meat for Privacy Hawks*, AM. BANKER, Sept. 11, 2000, at 4 (describing, among other things, a sale by a California bank of data on 3 million customers that led to 800,000 fraudulent charges on their credit-card accounts); Souccar, supra note 75 (discussing a controversial balance-transfer offer that relies on information about individual cardholder balances). It is clear, despite the official U.S. policy, that American consumers have become seriously concerned about the issue. *See*, *e.g.*, *Survey: Most in U.S. Want Companies To Guarantee Online Privacy* http://www.cnn.com/2000/TECH/computing/08/18/privacy.report/index.html (reporting a poll indicating that 86% of U.S. internet users prefer an "opt in" policy that would require Web sites to seek permission from users before they disclose personal information"); The Industry Standard & Odyssey, E-Commerce—Consumers: What, Where and Why They Buy—Shopping the Web (unpublished report on file with author) (reporting results of a survey indicating that 82% of online buyers would be more likely to buy from a Web retailer that promised not to share personal information).

enactment of such regulations difficult. Most obviously, free availability of information is central to many of the benefits that information technology can provide, benefits that lower the cost and improve the effectiveness of a wide range of services.[186]

Moreover, if consumers exhibit serious concern about the problem, several firms have developed a relatively simple technological solution that involves the issuance of "disposable" card numbers. Under those schemes, the cardholder would use a different number for each transaction, which would (if the issuer of the disposable number is reliable) hinder the aggregation of data about the customer's purchasing practices.[187]

Similarly, the micropayments problem is being addressed by a variety of systems that can be categorized loosely as payment aggregators. Generally, those systems collect a large volume of small-dollar charges for each cardholder and obtain payment for those charges by a single periodic charge to a conventional payment system. Thus, for example, subscribers to Japan's I-mode service can pay

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[186] *See* Mann, *supra* note 106 (discussing the benefits to financial systems of the free flow of information); *see also* W.A. Lee, *U.S. Banks Urged to Meet E.U. Data Rules*, AM. BANKER, Oct. 24, 2000, at 1, 10 (reporting Japanese promulgation of a draft privacy directive similar to the European directive); Jyōhō tsūshin gijyutsusenryaku honbu [Committee on IT Strategy Headquarters], *Kojin jyōhō hogo kihon hōsei ni kansuru taikō* [Consulting Report on Protecting Privacy] http://www.kantei.go.jp/jp/it/privacy/houseika/taikouan/1011taikou.html (Oct. 11, 2000) (discussing plans to enact Kojin jyōhō hogo kihonhō [Law regarding the protection of privacy]).

[187] *See* Julia Angwin, *And How Will You Be Paying for That?*, WALL ST. J., Oct. 23, 2000, at R37 (discussing products by American Express, Cyota, and Orbiscom); W.A. Lee, *Cyota Hiring Bankers To Generate U.S. Biz*, AM. BANKER, Oct. 4, 2000, at 14, *available at* 2000 WL 25345935 (describing SecureClick, a disposable-card product developed by an Israeli startup firm); Miriam Kreinin Souccar, *Amex has Disposable Answer for Web Privacy*, AM. BANKER, Sept. 8, 2000, at 1, 9 (describing American Express product as well as competing Orbiscom product being tested by Visa and MasterCard); Lavonne Kuykendall, *Disposable Nos.' Flaws Catch up with Hype*, AM. BANKER, Oct. 26, 2000, at 9 (discussing difficulties of using disposable numbers with car rentals and other recurring-charge transactions); *Oasis Virtual Card*, NILSON REP., Sept. 2000 (Issue 723), at 1, 5, 7 (describing a similar iCard product offered by Oasis Technology) ; *see also Buyer Privacy Software*, NILSON REP., Oct. 2000 (Issue 725), at 1, 6-7, 9 (describing products that prevent the merchant from learning either the customer's identity or information related to the customer's credit-card account).

for online purchases by having the purchases added to their monthly I-mode bill.[188] A more cautious solution makes a single small charge (in the range of $20) to the cardholder's account and then gives the customer a PIN that the customer can use to make micropayment transactions until the $20 is exhausted.[189]

Thus, there is no inherent reason that some descendant of the existing card-based payment systems could not play a significant role in internet transactions. The interesting question is what that descendant would look like. The answer probably depends on the time frame within which we are looking. In the long run, solutions should develop that are more or less independent of the historical accidents that have determined the nature of the existing payment systems. Thus, among other things we should see a general separation of the existing menu of payment and authentication functions. The current market has two principal products. The first is the credit card, which pairs (a) the option of credit-borrowing or immediate cost-free repayment, with (b) authentication primarily by the customer's signature. The second is the debit card, which pairs (a) immediate payment from a deposit account, with (b) authentication by PIN. There is no logical reason that credit-option repayment need be linked with the weak authentication device of the signature. That link is a relic of the historical roots of the credit card as a retail payment device in a paper-based age in which a signature was the most reliable and convenient method of authentication. Similarly, the debit-payment function is linked with PIN authentication because of the historical roots of the ATM card as a device for remote transactions at which no attendant would be present to verify the cardholder's identity.

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[188] *See Nearly Half of I-Mode Users Shop Online: Survey*, NIKKEI INDUSTRIAL DAILY, Sept. 29, 2000, *available at* http://www.nni.nikkei.co.jp; *see also Micro Payments*, *supra* note 182, at 10 (discussing firms that add micropayment billing to monthly telephone statements).

[189] *See Micro Payments*, *supra* note 182, at 10 (discussing MicroCreditCard's product). For discussion of an analogous Japanese product, see *Itochu To Lead Team in Setting up Online Bank*, NIKKEI WEEKLY, Apr. 17, 2000, at 13. The Itochu product (to be sold through an entity called eBank) would require a deposit by each customer of 500,000 yen and charge merchants a commission of 3% on each payment. That product would be designed to handle not only micropayments, but also large payments as well. *See id.*

In assessing what the future product will look like, the most obvious point is the complete inadequacy of signature-based authentication for online transactions. The fraud rates on internet credit-card transactions are difficult to pin down, but they certainly are in the range of at least 1% of all transactions (some 15 times the normal rate).[190] In particularly risky sectors (those that sell information rather than goods) the fraud rates might approach 10%.[191] Thus, some change is required: either the credit card will fail or it must abandon its historical reliance on the signature as the primary authentication mechanism.

Given the high visibility of PIN-based authentication in the debit- and ATM-card sectors, PIN-based authentication is the most obvious candidate for a new authentication system.[192] Indeed, the credit-card industry intends to implement that solution in the near future.[193] The industry will introduce PINs together with so-called "IC" cards, which include a powerful integrated-circuit chip that has not only a substantial amount of data-storage capacity, but also a relatively powerful microprocessor. Such a chip would include a record of the card's PIN, which would

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[190] *See* Julia Angwin, *Credit-Card Scams Bedevil E-Stores*, WALL ST. J., Sept. 19, 2000, at B1; Klebe Interview, *supra* note 30 (transcript at 6) (suggesting that the fraud rate for internet merchants shipping "physical" goods is about 3%).

[191] *See* Klebe Interview, *supra* note 30 (transcript at 6) (suggesting that the fraud rate for internet merchants selling digital goods is 10-15%); W.A. Lee, *Merchant-Acquirers Frazzled by E-Commerce*, AM. BANKER, Aug. 29, 2000, at 9; Melba Newsome, *Pornography: The Plastic Police Are Cracking down*, RED HERRING, Sept. 2000, at 68-69 (discussing high rate of losses at pornography sites and Visa and MasterCard rules that apply to sites with chargeback rates that exceed 25%).

[192] Other responses are possible. One third-party provider affiliated with an American credit bureau, for example, maintains a database of information tied to card numbers and provides merchants with questions – presumably of the "mother's maiden name" variety – that the merchant can ask to authenticate cardholder identity. *See* Megan J. Ptacek, *Equifax System Checks Online Customers for ID*, AM. BANKER, Oct. 2, 2000, at 11. I also have noticed sites beginning to ask for such information as the telephone number of the card issuer (information that would be available to a person with the card but probably not to a person with nothing beyond a stolen card number).

[193] *See Smart Card Economics – U.S.*, NILSON REP., Sept. 2000 (Issue 724), at 1, 5, 10 [hereinafter *Smart Card Economics*] (detailed discussion of plans for PIN-based smart cards in the United States); Anonymous Interview Seven, *supra* note 104 (discussing plans for the introduction of PIN-based smart cards in Japan).

ensure the authenticity of the transaction. In the retail context, IC cards could compare a manually entered PIN to the PIN recorded on the chip and permit transactions only if the two matched. In the internet context, IC cards would verify that the PIN on the card matched the PIN entered on the keyboard; only if the two matched would the personal computer forward to the merchant data from the card necessary for the transaction to proceed.[194]

In some countries, the security advantages alone might be enough to justify the costs of IC cards.[195] But chip cards have several other advantages for the credit-card industry. One advantage that is important to issuers in many countries is that the powerful chips have the capacity to store many applications on the cards in addition to the payment mechanisms. Thus, the cards might include loyalty programs (keeping track of affinity points earned by the cardholder), access functions (for securing business, government, and residential facilities), medical

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[194] System developers expect that the card and card reader would include software that would encrypt the information sent to the merchant, avoiding the security problem of unencrypted transmission of credit-card data. *See* Anonymous Interview Seven, *supra* note 104. That is important, because the most common existing encryption method (Secure Sockets Layer) is relatively weak, and because the principal robust response (SET, the Secure Electronic Transactions system) is generally viewed as ineffective because of its excessive complexity. *See Visa Delicately Gives Hook to SET Standard*, AM. BANKER, June 21, 2000, at 1, *available at* 2000 WL 3362447 (describing the demise of SET and problems with the SSL system).

[195] *See* Jennifer A. Kingson, *Breakthrough Moment for Chip Cards*, AM. BANKER, Sept. 13, 2000, at 1, 10 (suggesting that authentication is the primary benefit of chip cards in the current market).

records storage, or any number of things.[196] The card issuers hope to obtain revenue from providing cards that provide those services.[197]

Another factor of great importance in Japan[198] is telecommunication costs. Because IC-authenticated transactions often proceed without a contemporaneous online connection, the merchant that accepts the IC-enhanced cards does not bear the cost of a telephone call for each transaction. In a market where that cost is about a dime, that savings can be substantial.[199]

Although that solution should permit relatively secure authentication, it is not perfect. The biggest problem is that it relies on the relatively bulky and expensive route of disseminating the IC-enhanced cards[200] together with card readers that could be attached to or built into the cardholder's personal computer. System developers in Japan believe that during 2001 issuers will begin disseminating the cards and that

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[196] *See* Jennifer A. Kingson, *More on How U.S. Banks Aim To Get Smart*, AM. BANKER, Sept. 20, 2000, at 1, 20 (discussing using cards to download ticket purchases); Jennifer A. Kingson, *Visa Working To Jump-Start Chip Card Use*, AM. BANKER, Sept. 27, 2000, at 1, 11 (discussing Visa products that come preloaded with a "loyalty" function (for affinity programs) and an access function (for security)); Anonymous Interview Nine, Tokyo (Oct. 11, 2000) (describing medical records and other applications); Interview with Jim McGauley, MedCard Systems, Inc., Ann Arbor, Mich. (Apr. 29, 1998) (interview with the CEO of a startup company developing a card-based medical-records application).

[197] *See* Jerome Svigals, *Comment: Urgency for Banks as Chip Card Case Builds*, AM. BANKER, Sept. 18, 2000, at 16 (describing "the discovery that the multiple-application smart card is an economic gold mine"). The *Nilson Report* is more skeptical about revenues from multi-application cards, suggesting that any profits from those revenues are several years away. *See Smart Card Economics*, *supra* note 193, at 5. Nilson reports that the short-term motive driving the initial smart-card issuers is the likelihood that the initial smart-card accounts will last longer than average credit-card accounts and thus be more profitable. *See id*. at 5.

[198] *See supra* note 118 (discussing the high cost of telecommunications in Japan).

[199] Some transactions still will have to be authorized online, generally because of card-specific security concerns that cause the terminal to contact the issuer. But the reduction in online transactions should be significant. *See* Svigals, *supra* note 197, at 16-17 (recounting French experience, in which the terminals have authorized 90% of the transactions and contacted the issuers in only 10% of the transactions).

[200] A fall in the price of the cards (attributed to increasing volume) has spurred the recent hopes for broad imminent adoption. *See* Jennifer A. Kingson, *Visa Recruits 9 Banks to Cheaper Smart Card*, AM. BANKER, Sept. 11, 2000, at 1, 20.

many merchants will begin using such terminals during the same year. The high costs of implementation, however, make it unclear that those plans will succeed.

The difficulty is exacerbated by Japan's rapidly growing M-commerce (mobile commerce) market, which depends on portable phones. There is nothing inherently incompatible between chip cards and mobile phones. France, for example, already has a system in which mobile phones contain a slot into which the user can insert a chip card. That system, however, depends on the "SIM"-style mobile phones common in Europe, which are much larger than the I-mode style phones common in Japan. The I-mode style phones seem to be too small to permit insertion of a card reader. Thus, for the immediate future at least the IC card is not a good solution in the mobile-commerce market.

An alternative response to the weak authentication of the credit card as an internet payment system would rely on software rather than hardware. That response would use the debit card's authentication system, which requires the cardholder to enter the PIN and transmit it to the issuer (or merchant). The technology is not at all difficult. United States firms (the PIN-based regional debit-card networks) this year are beginning pilot projects in which consumers use software on their computers to encrypt PINs and transmit them to merchants to permit contemporaneous on-line authentication transactions.[201] Similarly, in Japan, the mobile banking so common with I-mode and similar phones already requires transmission of a PIN to the financial institution. The same software easily could be adapted to accommodate

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[201] *See* Mathias Rieker, *NYCE Debit-Pay System Wins HSBC, Citi Support*, AM. BANKER, Aug. 4, 2000, at 1, *available* at 2000 WL 25344664 (discussing adoption by CitiBank and others of SafeDebit product developed by NYCE Corp.); Helen Stock, *Nacha Eyes ATM Card Test for Web Shopping*, AM. BANKER, Nov. 12, 1999, at 19 (describing 2000 pilot developed by a group that includes Nacha, Citigroup, and the Star and Pulse ATM Networks); Helen Stock, *NYCE, Other ATM Nets Discussing Debit Card Alliance for E-Commerce*, AM. BANKER, Mar. 1, 2000, at 1, *available at* 2000 WL 3359916 (discussing efforts to standardize debit-card internet payment systems for the United States).

transmissions of the PIN numbers to merchants. Plans for such a system seem to be well on their way.[202]

If M-commerce becomes an important part of Japanese E-commerce, that solution will have a substantial advantage, because its reliance on software makes it practical for the Japanese mobile phones on which that commerce rests. More generally, to the extent that the case for the IC-enhanced card rests on telecommunications costs savings, the relative advantage is less clear in the internet context, where each transaction requires an online connection already (at least between the consumer and the merchant). Hence, it seems unlikely that debit-card authentications would require an online merchant to incur the same marginal telecommunication costs per transaction as brick-and-mortar merchants do.[203]

Another advantage that a software-based solution has for internet commerce in Japan is that Japan starts out with a single interconnected ATM-card network that has an impressively high rate of market penetration: there are more than 300 million cash cards already outstanding in a country with a population of less than 130 million. Because the cards need not be changed for them to have access to the J-Debit system, that system could have universal access to the consumer market almost immediately.[204]

The basic structure of the choices that confront the developers of electronic payment systems is relatively simple. If they remain where they are, advances in

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[202] *See Sumitomo, Sakura, Sanwa Banks To Open Debit-Based Online Mall*, NIHON KEIZAI SHIMBUN, Nov. 14, 2000, *available at* http://www.nni.nikkei.co.jp (discussing an online mall to be opened in November of 2000 that will accept payments only by debit cards).

[203] Many online merchants proceed without a continuous online connection. They access a server periodically to download transactions. *See* Anonymous Interview Ten, Tokyo (Oct. 6, 2000). Those merchants could aggregate their transactions periodically and transmit the transactions to the acquirer in a single batch (online) or by magnetic tape (offline). Alternatively, if the merchant maintains a continuous connection, it would incur no marginal telecommunication costs as long as it was able to contact the appropriate authorization authority (ordinarily CAFIS (Credit and Finance Information System) in Japan) over the same online connection. That seems to be a relatively simple arrangement.

[204] *See Debit Card Usage*, *supra* note 168 (reporting 300 million J-Debit cards in circulation in mid-2000).

technology inevitably will subject them to high losses from fraud. If they move forward with solutions that rely on IC-enhanced cards, they can provide robust protection against fraud, along with savings on telecommunication costs and (perhaps) some other incidental revenues from card issuance, but only at the cost of a substantial upgrade to the hardware infrastructure of the industry and its merchants. On the other hand, if they move forward with software-based PIN solutions, as in the debit-card industry, they will remain dependent, at least in the brick-and-mortar context, on contemporaneous telephone authorizations and the related costs.

Hence, it may be seen as a rough balance between long-term savings on telecommunication costs and short-term savings on hardware costs. Given the wide variations in telecommunications costs from country to country, it may be that such a balance would be struck differently in different countries. Similarly, because the costs of online connections cannot be removed in the internet context, the balance in that context might be different than the balance in the conventional context. But the proliferation of multiple solutions has its own costs, not the least of which is consumer confusion and hostility to any of the solutions. Thus, whatever happens, there is good reason to believe that a single uniform solution eventually will prevail – for both brick-and-mortar and internet transactions. And the ultimate victor, I think, will depend on which industry can lower its costs more rapidly: the industry that manufactures the chips on which IC-enhanced solutions rely or the telecommunications industry.

V. Conclusion

The basic message of this paper is a simple one: institutions matter. Financial systems that develop in one country cannot be transplanted without change to other countries that have different institutional settings. If they are transplanted – as the debit card and credit card have been – then the roles that they play will shift to account for the backgrounds in which they are placed as surely as the growth of new plants seeks the spaces between plants already nearby.

The message for internet payments is somewhat different, because there the systems are growing anew in all countries. Still, differences in institutional

backgrounds might lead to entirely different solutions, but if the internet comes to function as a single worldwide market, as seems likely, a single relatively uniform payment solution should appear in the near future.