Consumer Credit and the American Economy

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above two-thirds. Among credit cards, the three-party or general-purpose cards that have a revolving feature, the bank-type credit cards, show the most notable increase over the period. In the early 1970s, two-party cards issued by retail firms and usable only in the firm's stores were the most commonly held type of credit card; bank-type cards were much less common.

Bank-type credit cards issued under the MasterCard and Visa brands are so widely held and used today that it is difficult to recall that they were not especially common only four and a half decades ago. Known then as Master Charge and BankAmericard, they were a new product in the mid-1960s, and by 1970, together they (and some limited regional brands at that time) reached only about one-sixth of households. By 1995, however, holding of bank-type cards had become more common than holding of retail store cards. In 2010, bank-type cards (including newer Discover and American Express Optima brands), but not "travel and entertainment" cards that do not have a revolving feature, were themselves in the hands of almost two-thirds of households.

As discussed earlier, consumers use credit cards for two main purposes: as a substitute for cash and checks when making purchases and as a source of revolving credit. In 1970, just more than one-fifth of all households owed a balance on a credit card after making their most recent card payment. By 1989, the fraction reached two-fifths, and it has stayed near or above this proportion since. Most of the increase was caused by the growing popularity of bank-type cards as devices for generating revolving credit, which overshadows a relative decline in the importance of revolving credit on store cards. In 1970, only 6 percent of households had a bank-type card with an outstanding balance after their most recent payment. The proportion rose steadily until 1995 and then grew more slowly to 39 to 41 percent from 2001 to 2007 before falling off to 34 percent in 2010, following the end of the recession about six months before the survey. In contrast, the proportion of households reporting an outstanding balance on a retail store card peaked in 1983, at 29 percent, and in 2010, at 17 percent, it was the lowest it has been since the 1970 survey.

The Surveys of Consumer Finances show that the holding of general-purpose credit cards with a revolving feature has become more widespread among households at all income levels. For households in the lowest income group, about 2 percent had a bank-type credit card in 1970, compared with a third or more of households beginning with the 2001 survey (table 7.4). For those in the highest income group, the holding of bank-type cards almost tripled between 1970 and 1995.

For each income group, the percentage of card holders carrying a balance on bank-type cards also increased over four decades, as did the mean and median revolving credit balances (in constant dollars). Despite some shifts within the period, the shares of total revolving balances on these cards accounted for by each income group have not changed dramatically over the decades, perhaps contrary to popular impressions. For example, despite a sharp increase in card holding by the lowest income group, the group's share of total revolving debt on bank-type cards rose only to 6 percent in 2010, up from 2 percent in 1970 but still not a large proportion of the total. The highest income group accounted for about 30 percent

Table 7.4 Prevalence of Bank-Type Credit Cards and Outstanding Balance Amounts, by Household Income Quintiles, Selected Years, 1970–2010, in Percent Except as Noted

Item	1970	1977	1983	1989	1995	2001	2004	2007	2010
Lowest quintile									
Have a card	2	11	11	17	28	38	37	38	33
Carrying a balance	27	40	40	43	57	61	61	58	56
Mean balance (2010 dollars)	1,194	974	1,529	1,045	3,181	2,389	3,382	4,040	4,032
Median balance (2010 dollars)	447	717	1,091	788	1,326	1,128	1265	982	1,100
Share of total revolving balance	2	4	3	2	7	6	7	6	6
Second-lowest quintile									
Have a card	9	23	27	37	55	65	61	57	50
Carrying a balance	39	44	49	46	57	59	60	57	54
Mean balance (2010 dollars)	878	1,407	1,208	2,280	3,495	3,173	4,476	4,051	4,210
Median balance (2010 dollars)	672	806	873	1,752	2,140	1,349	2,071	1,866	1,500
Share of total revolving balance	9	14	9	8	14	13	14	9	10
Middle quintile									
Have a card	14	37	41	62	71	79	76	75	67
Carrying a balance	47	45	58	56	58	61	64	65	56
Mean balance (2010 dollars)	1,093	1,177	1,547	2,877	3,934	4,134	5,453	5,441	5,923
Median balance (2010 dollars)	979	896	981	1,682	2,140	2,454	2,301	2,650	2,300
Share of total revolving balance	23	19	20	21	21	22	23	18	19
Second-highest quintile									
Have a card	23	51	57	76	83	87	87	88	82
Carrying a balance	39	52	55	62	60	55	57	65	59

(Continued)

Table 7.4 (CONTINUED)

Item	1970	1977	1983	1989	1995	2001	2004	2007	2010
Mean balance (2010 dollars)	1,346	1,127	1,678	2,947	3,582	4,956	5,982	7,982	6,599
Median balance (2010 dollars)	1,119	1,004	1,091	1,577	2,140	2,454	3,451	3,927	3,000
Share of total revolving balance	35	31	28	30	23	25	26	31	27
Highest quintile									
Have a card	33	69	79	89	95	95	96	94	94
Carrying a balance	30	39	47	46	50	40	45	47	42
Mean balance (2010 dollars)	1,015	1,198	2,042	4,552	5,945	8,273	8,284	11,303	11,690
Median balance (2010 dollars)	840	896	1,222	3,504	2,994	3,681	3,451	5,988	6,000
Share of total revolving balance	30	32	40	39	36	34	30	35	39
All income groups									
Have a card	16	38	43	56	66	73	71	70	65
Carrying a balance	37	44	51	52	56	54	56	58	52
Mean balance (2010 dollars)	1,118	1,185	1,709	3,203	4,213	4,744	5,772	7,057	6,969
Median balance (2010 dollars)	840	896	1,091	1,752	2,140	2,209	2,416	2,945	2,900
Share of total revolving balance	100	100	100	100	100	100	100	100	100

In 1970, respondents were asked about *using* cards; in all other years, they were asked about *having* cards. Proportions that "have a card" are percentages of all households; proportions "carrying a balance" are percentages of holders of bank-type cards with an outstanding balance after the most recent payment. Mean and median balances are for card holders with outstanding balances after the most recent payment and are in 2010 dollars, adjusted using the Consumer Price Index for All Urban Consumers, all items. Shares may not add to 100 percent because of rounding.

SOURCE: Surveys of Consumer Finances.

of revolving debt on bank-type cards in 1970. This proportion rose to 40 percent in 1983 and has fluctuated within this range since then.

Some Studies of Credit Card Holding

Widespread interest in growth of credit cards includes interest among economists, and they have offered a number of studies of the phenomenon. Because card credit outstanding continues to grow, there probably will be more studies of this sort in the future.

In a pair of studies using data from the Surveys of Consumer Finances, economist Peter S. Yoo (1997, 1998) of the Federal Reserve Bank of St. Louis examined the economic factors contributing to the growth of credit card debt from 1992 to1995. Specifically, he studied whether growth in card-related debt was the result of more households with cards or of more debt outstanding per card account. A reasonable expectation is that both are responsible, but the real question is the degree.

Yoo found that relatively little of the increase in credit card debt from 1992 to 1995 came about because of an increase in the number of card holding households. From his calculations, 17 percent of the debt increase was a result of increasing numbers of card holders. Most of the rest was a result of higher balances (a little was also a result of the interaction of the two effects, higher average balances also among those newly with cards). According to Yoo:

> Changes in average balances accounted for the vast majority of the increase in total card debt between 1992 and 1995. Average credit card debt of all households grew at a 9.6 percent annual rate during those three years, considerably faster than the increase in prices, 2.8 percent annual rate, and household income, 4.9 percent annual rate. In sum, the increase in average credit card balances accounted for 77 percent of the increase in household credit card debt between 1992 and 1995. (Yoo 1998, 26)

Yoo also found that lower-income households (those in the bottom half of the income distribution) increased their holding of credit cards and the balances outstanding on their cards somewhat faster than the population as a whole during these years, but upper-income households were responsible for most of the rise in total credit card debt.

The view that growth in card use would eventually come from more intensive use rather than from more widespread use is, not surprisingly, not a new one. In fact, as card holding gradually has become almost universal over the years, it becomes virtually a truism that growth must come from greater intensity of use; card use cannot spread further when all those who want to use cards and can qualify for cards have and are using them. At some saturation point, any further growth at all must come from more intensive use among those who have cards.

Academic study of the evolution of credit reporting is a relatively recent development. Pagano and Jappelli (1993) demonstrated that voluntary exchange of information among lenders improves the quality of the borrower pool (reduced default rates) and may increase the volume of lending. Their theoretical model showed that lender incentive to share information about borrowers (regarding payment experience, current obligations, and exposure) rises with the mobility and heterogeneity of borrowers, the size of the credit market, and advances in information technology. The intuition here is straightforward. Mobility and heterogeneity in the borrower pool reduce the likelihood that a lender's own experience will be sufficient to gauge the risk of a new applicant.[2] In addition, they showed that the need for information to supplement a lender's own experience also rises with the number of competitors, because new loan applicants may have multiple relationships across financial institutions, and a single lender's relationship may underestimate the extent of a borrower's exposure.

A credit bureau institutionalizes the sharing of information that is relevant to the assessment of borrower risk. Padilla and Pagano (1997) modeled the emergence of the credit bureau as an integral third-party participant in credit markets. In their model, cooperation increases the size of the lending pie. Lenders collectively benefit if they commit to exchanging information about borrower types, even at the expense of restricting their individual abilities to extract informational rents from the experience they amass on their existing customers, and they create an enforcement mechanism that ensures accuracy of the information exchanged. The third-party credit bureau fills the role of both clearinghouse and enforcer. On average, both interest rates and default rates are lower, and interest rates decrease over the course of the relationship between the client and the client's bank.

The exchange and retention of increasingly detailed information about borrowers are not necessarily completely better, however. Vercammen (1995) and Padilla and Pagano (2000) offered separate but related models of the optimal amount of information to be shared based on its impact on borrower incentives to repay loans. Vercammen set forth a conceptual model for limiting the amount of time that negative information (for example, delinquencies, defaults, or bankruptcy) should remain a part of the borrower's reported credit history. Negative information that never rolls off discourages borrowers from performing well on loans. In contrast, the prospect of "cleaning the slate" reinvigorates the borrower's incentive to handle a new loan well, so as to rebuild a record of positive performance. The flip side of this argument is that truly low-risk borrowers reveal themselves over time as such. The presence of a long record of good payment history convinces lenders that the borrower is low-risk and consequently reduces the borrower's incentive to perform well on the next loan. Vercammen concluded that limiting the length of the reported credit history (i.e., mandatory deletion of older information) would keep both types of borrowers honest, because it raises the

2. They offer supporting evidence: countries with greater residential mobility (for example, Canada, Japan, Australia, and the United States) have more extensive private credit reporting activity, as measured by number of credit reports per capita, than some other countries.

reputational stakes associated with the performance of their next loan. Similarly, Padilla and Pagano (2000) concluded that fine-tuning the amount of information shared to some level below "perfect" can maximize the disciplinary effect resulting from credit reporting.[3]

Around the globe, the pooling of borrower credit histories has become commonplace, although much of the reporting infrastructure has been established in just the past four decades or so (see Miller 2003, 34–37). Credit information sharing may take place on a voluntary basis through private credit bureaus that are set up either through lender consortiums or by third parties. In many countries, the information sharing and pooling may be mandatory through public credit registries (PCRs) set up and run by the country's central bank.[4] In some countries, both types of credit bureaus serve the market.

Jappelli and Pagano (2006) synthesized the results of two detailed cross-country surveys conducted to determine the extent of credit reporting and when it originated. One survey covered forty-nine countries (Jappelli and Pagano 2002); the other survey was commissioned by the World Bank and surveyed seventy-seven countries (Miller 2003). Together, the surveys revealed that before 1950, fewer than 20 percent of surveyed countries had a private credit bureau, and fewer than 5 percent had a PCR. By 2000, 60 percent of countries surveyed had a private bureau, and 50 percent of countries had a PCR.

Private credit bureaus are usually structured around reciprocal agreements, in which furnishers of data (creditors) voluntarily agree to contribute accurate data (usually in prescribed formats) in exchange for access to consolidated reports on potential customers. The level of detail in the report varies widely across countries. The threat that a data furnisher will be denied future access to reports if the furnisher fails to report, or knowingly contributes inaccurate data, helps to reduce the "free rider" problem inherent in sharing. Reported data can range from a simple statement of current or past delinquencies (negative information) to more detailed statements that itemize account balances, credit limits, and account age, by type of account (positive information). In some countries, credit reports also include information on borrower assets and employment.

Because sharing with a PCR is compulsory, all lenders are covered, but PCR reporting is typically required only for loans that meet or exceed a certain loan

3. Jappelli and Pagano (2006) point out that a stronger case can be made for more punitive retention and sharing of negative information in many developing countries, where credit reporting serves to offset weak judicial enforcement of credit contracts. Weak creditor collection remedies elevate the importance of reputation in the lending decision, and the reporting of prior delinquency and default boosts the borrower's incentive to pay as agreed. For example, in Brazil a well-developed network for sharing information on bad checks has so effectively reinforced consumer incentives to avoid being blacklisted for writing bad checks that the exchange and acceptance of postdated checks by merchants have become one of the most widely used forms of consumer financing.

4. Jappelli and Pagano (2002 and 2006) discuss the factors that encourage the establishment of a PCR versus a private credit bureau. PCRs are more likely to evolve in countries where private arrangements have not yet arisen and where creditors' rights are poorly protected.

consumers the equivalent of a "warranty" on the final product. If the consumer disputes an item, the bureau is compelled to reinvestigate the matter and fix it whenever an error is confirmed.

The "warranty" works as follows. First, and most important, consumers received the right to view their files. Upon request, the credit bureaus needed to provide consumers with a copy of their reports, including a list of recipients of those reports during the past six months.[15] Further, users of credit reports that took "adverse action" toward a consumer (for example, denied credit, insurance, or employment or imposed a higher charge) because of information contained in a credit report were required to inform the consumer of this fact and supply the consumer with the name and address of the credit bureau that supplied the report. The consumer was then entitled to a free credit report if he or she contacted the credit bureau within thirty days of receiving the "adverse action" notice. This feature alerted a consumer that there might be a problem with the credit report and provided the opportunity to inspect it for inaccuracies. The FCRA also required the bureau to implement a dispute resolution process to investigate and correct errors alleged.[16]

Staten and Cate (2005) argued that it is not the case that the FCRA's remedial approach leaves the credit bureau with no incentive to *prevent* errors:

> Although there is no explicit dollar fine imposed when a consumer detects an error, the mandatory re-verification process is costly for both bureaus and creditors. Like the automaker who must reimburse dealers for warranty work to repair defective vehicles, both creditors and the bureaus would like to reduce the costs they will be required to incur if a consumer finds an error. They will invest in reporting and updating procedures that eliminate most errors. Bureaus [in the competitive US market] have an additional, powerful incentive to invest in procedures that eliminate problems in matching new information to files: the creditors are their customers and they pay for accuracy. A bureau with a reputation for file errors will suffer lost sales in a competitive market for credit reports as creditors shift their business to vendors that establish a reputation for greater reliability. (Staten and Cate 2005, 243–244)

15. Note that this prompted a major change in reporting industry practice, because before the FCRA, bureaus had refused to share credit file contents with consumers and essentially had no consumer relations function at all. Under the original FCRA, bureaus were permitted to impose a "reasonable charge" for access in most cases, although later amendments capped the charge and eventually required that the bureaus offer consumers one free credit report per year. The disclosure of a credit report to consumers must include names of recipients of files for the past two years, which helps consumers to enforce the permissible purpose provision.

16. In the original FCRA, bureaus were to delete any disputed data that they could not verify within a "reasonable period of time." In later amendments, "reasonable time" was defined as forty-five and, eventually, thirty days. If the bureau determines that the information is accurate but the consumer disagrees, the law requires the bureau to include a statement from the consumer of not more than one hundred words with future credit reports that contain the disputed data.

The economic rationale for the "warranty" part of the regulation is that at some achieved degree of accuracy, it becomes cheaper to correct the error the consumer finds than it is to adopt procedures that would scrutinize every item in every file in an attempt to detect potential errors before release. By assigning consumers the legal role of quality inspector, the FCRA reinforces the financial incentive for bureaus to invest in accurate reporting and prevent those errors for which it has a comparative advantage. But a requirement that bureaus eliminate errors entirely in advance of release would make the system substantially more expensive to maintain and operate, with negative implications for the price and availability of credit and related products. The FCRA explicitly places responsibility for monitoring file accuracy on the party who can determine accuracy at the lowest cost: the consumer.[17]

1996 FCRA Amendments

The FCRA took effect in 1971 and for the next twenty-five years regulated credit reporting with no major amendment, although the FCRA had the benefit of frequent rule writing and clarification by the Federal Trade Commission. Given the preexisting competitive reporting market, the original FCRA created a flexible and largely self-enforcing regulation that proved remarkably robust despite dramatic changes in technologies, markets, and uses for credit report information.

By the late 1980s, however, the growth and national scope of credit marketing, coupled with new uses for credit reports and greater consumer awareness of the importance of credit reports, raised new concerns about credit reporting. In particular, four issues triggered an ongoing policy debate: (1) the privacy implications of using credit reports for "prescreening" consumers to determine which were eligible and likely to respond to an offer of credit, for example, credit card, mortgage, home equity line of credit, or other credit related offers; (2) the extent to which information from credit reports could be shared among corporate affiliates without direct consumer consent; (3) the accuracy of credit reports; and (4) allegations of lack of responsiveness by the credit bureaus to consumer requests and concerns. In addition, by the mid-1990s, credit bureaus and credit grantors worried that a growing number of state-level credit reporting and privacy laws enacted in the absence of federal legislation to address the ongoing issues were beginning to threaten the efficiency and cost-effectiveness of the national credit reporting system.

17. It is clear from decades of commentary on the FCRA that the Federal Trade Commission recognized the important role and responsibility that consumers played in facilitating the system's production of accurate credit reports. For example, see the testimony of Jeanne Noonan (1991, 40).

Reserve Board, including a ten-year review of credit report accuracy. In 2010, the Federal Trade Commission provided congressional testimony that summarized and outlined its completion of almost all of the "almost 30 rules, guidelines compliance forms, notices, educational campaigns, studies and reports" required under the FACT Act with references (see Federal Trade Commission 2010). At that time, the ten-year accuracy review required under section 319 of the Act was still ongoing. The FTC released the study in late 2012 (Federal Trade Commission 2012, discussed further below).

COMPREHENSIVE CREDIT REPORTING AND CREDITOR DECISION MAKING

As indicated, the credit reporting environment varies widely around the world, and the difficulty and cost of risk evaluation rise and fall accordingly. Some countries, such as the United States, Canada, and the United Kingdom, have credit reporting systems characterized by comprehensive, full-file reporting that yields a credit report for each consumer containing both positive and negative information about the borrower's experience across all types of credit products. At the other end of the reporting spectrum are credit reporting systems that produce consumer credit files containing only negative information (delinquencies, charge-offs, bankruptcies, etc.). Essentially, consumers in a negative-only reporting country would have either derogatory information in their credit report or no information at all.

The problems for a lender trying to assess the applicant's risk in a negative-only reporting environment are readily apparent. Such credit reports give a lender little or no information for lower-risk borrowers who use credit responsibly. The lender cannot discern the length and breadth of the consumer's past credit experience, nor can the lender determine the consumer's current credit obligations. The consumer gets no benefit from handling credit responsibly in the past, and the lender cannot tell the extent to which the consumer is burdened with other credit obligations at the time of the application. Only when the file contains some negative information does it help the lender at all. Otherwise, the applicant remains shrouded in a fog of uncertainty.

In between the full-file comprehensive reporting systems and the negative-only systems are a host of intermediate reporting environments that contain some positive information but not a complete history of a consumer's credit experience. Common examples are reporting systems that evolved from lender consortiums within a particular segment of the industry. For example, banks may have historically participated in the exchange of information within the banking community about their consumer loan experience but did not share that information with nonbank creditors. Retail stores or finance companies may have developed their own sharing arrangements within their segment of the credit market. Even with positive data present, however, a credit report produced by any one consortium would be incomplete, because it would contain the information from lenders in only one segment of the industry.

Across all reporting environments, comprehensive, full-file reporting provides the greatest benefit to risk evaluation. Barron and Staten (2003) demonstrated this with a comparative assessment of benefits from reporting environments as part of a World Bank project to explore the role of credit reporting infrastructure in developing economies. Their report offered a set of simulations that demonstrated the benefits of increasingly comprehensive information about a borrower's credit profile. With these simulations, they showed the effects of differences in credit reporting.

By using a comparatively large set of credit report data elements from credit reports available in the United States to build a predictive scoring model and then removing particular data fields that in other countries are either banned by regulation or unavailable because of credit reporting limitations, they identified the reduction in predictive power attributable to the restriction. This technique quantified in two ways the cost imposed on lenders and consumers by the missing data. First, it revealed the increase in predicted delinquency rates for a group of accepted loans, relative to what lenders could achieve when more information is available about credit experience. It also identified the increase in the number of loans that can be approved for a given pool of consumer applicants, while maintaining a target delinquency rates.

In particular, Barron and Staten built credit scoring models that compared a lender's ability to measure borrower risk first under the US Fair Credit Reporting Act and second under the more restrictive Australian rules adopted with the passage of Australia's Commonwealth Privacy Amendment Act of 1990. This law was essentially a "negative-only" law. The simulations compared the accuracy of risk scoring models for a large group of consumers under each set of rules and determined the impact on the predicted default rate and on the percentage of customers who would receive loans under each regime.

A third simulation examined an intermediate reporting scenario that would allow the reporting of a limited amount of positive credit information, specifically the existence (and type) of accounts that are in good standing or have been paid in full, but not current revolving credit account balances or credit limits. In this scenario, borrowers are recognized for having established a successful history of handling credit but without revealing details about the level of current indebtedness or their maximum credit available. Table 6.1 displays the set of predictive variables available for use in the three simulations and also provides a sense of the types of credit report variables typically available to the credit risk scorecard builder in the United States.[20]

20. The list represents only a small subset of the standard credit report characteristics maintained by the three major US credit reporting agencies. A complete list would include several hundred variables. Because the precise components of commercial scoring models are proprietary, the scoring models in the simulations used are only approximations of a commercially developed scoring system, although the authors utilized the same sets of variables that commercial model builder Fair Isaac (FICO) has indicated on its website are important determinants of a borrower's creditworthiness.

The risk scoring models were built using US credit report data provided by one of the three major US credit bureaus using anonymous credit files with personal identifying information removed. The simulations were conducted with samples drawn from a database containing a