What's in the File?
The Economics and Law of Consumer Credit Bureaus

BY ROBERT M. HUNT

Lenders in the United States have voluntarily shared information about their customers — through credit bureaus — for nearly a century. In this article, Bob Hunt explains how sharing information about consumers' indebtedness and payment histories can benefit both consumers and lenders. These benefits depend, however, on the accuracy of the information reported and the care taken to ensure that information is disclosed only when it is appropriate. Hunt also describes the Fair Credit Reporting Act, which attempts to address these concerns. Finally, he closes by reviewing a number of challenges consumer credit bureaus may face in the early years of this new century.

Consumer credit bureaus are organizations that compile and disseminate reports on the creditworthiness of consumers.[1] Firms that lend to consumers provide the underlying data to the bureaus. In the United States today, there is at least one credit bureau file, and probably three, for every credit-using individual in the country. Over 2 billion items of information are added to these files every month, and over 2 million credit reports are issued every day (see *Consumer Credit Bureaus in the U.S.*). In many instances, real-time access to credit bureau information has reduced the time required to approve a loan from a few weeks to a few minutes or even seconds.

In this article, I examine the information problems lenders encounter when making loan decisions and how information-sharing — through institutions such as credit bureaus — can mitigate these problems. I then explore some of the factors that influence whether lenders will agree to share their information and credit bureaus' incentives to maintain accurate credit report files and to correct them when errors are found. With these insights in mind, I will examine the system of regulation adopted to safeguard privacy and improve the accuracy of credit bureau files. Finally, I'll review some of the challenges the industry faces in the first years of the 21st century.

THE ECONOMICS OF INFORMATION SHARING

Lenders encounter two problems in conducting their business. The first problem, *adverse selection*, occurs when borrowers are not all the same — they have different characteristics that affect the likelihood they can repay their debts — but lenders cannot always tell them apart. In this situation, lenders will offer terms that depend on the average risk of default. Since riskier borrowers are more likely to default anyway, this raises the cost of a loan disproportionately for the borrowers most likely to repay. Hence the customers most likely to produce an adverse outcome — defaulting on a loan — are the ones most likely to accept the less attractive loan terms.[2]

The second problem, *moral hazard*, occurs if once a loan is made, a

Bob Hunt is an economist in the Research Department of the Philadelphia Fed.

[1] This article focuses exclusively on firms that furnish credit reports on consumers. There are comparable institutions, such as Dun and Bradstreet, that collect and disseminate information on businesses.

[2] See the article by George Akerlof and the article by Joseph Stiglitz and Andrew Weiss. Evidence of adverse selection in the market for credit cards is found in the article by Lawrence Ausubel.

borrower would benefit by defaulting on the loan. More generally, a borrower may not take sufficient precautions to avoid default. Lenders try to design loan contracts to deal with this problem, but that's not always possible. In that case, lenders will lend to fewer borrowers, in smaller amounts, and on harsher terms.

Sharing information about borrowers' characteristics and payment histories can mitigate these problems. Armed with more information, lenders can better evaluate potential borrowers and offer loan terms commensurate with their risk of default. And if future access to credit is a valuable option to a borrower, he or she will have an incentive to avoid a default that might become known to other creditors.

Lenders could share information about their borrowers by simply sending it to every lender willing to reciprocate. But it is clearly more efficient for lenders to send this information to a single repository, which can make the information available to other lenders when they need it. Such repositories are the credit bureaus we have today.

BUT DO CREDIT BUREAUS JUST HAPPEN?

Should we expect credit bureaus to emerge as a natural response to the self-interest of creditors? The answer is often yes, but not always.[3] Economic analysis suggests a variety of factors can influence the formation of credit bureaus.

Technology and Market Size. One important factor is the cost of establishing and operating an information-sharing regime. These costs may be prohibitive if fixed costs are high and relatively little lending is going on. But if loan volume is sufficiently large, the costs can be amortized over many loans. In the U.S., advances in computing and telecommunications have reduced the marginal cost of sharing information but increased fixed costs because of the required investments in information technology. These fixed costs are affordable — in the U.S. anyway — because the consumer credit market has become so large.

Loan volume matters for another reason: When there is a high volume of applications for loans of modest size, lenders cannot afford to invest a lot of resources evaluating each application. A credit bureau can help lenders adopt lower cost techniques for screening applications — such as credit scoring — without incurring an unacceptable rise in overall credit risk. These methodologies can be refined using credit histories gathered from all

[3] This section draws on the articles by Tullio Jappelli and Marco Pagano, those by Jorge Padilla and Marco Pagano, and the article by James Vercammen.

Consumer Credit Bureaus in the United States

There are about 1000 consumer credit-reporting agencies in the U.S., employing 22,000 people and generating $2.8 billion in sales. If we control for inflation, industry revenues have quadrupled since 1972 — twice the rate of increase of the overall economy or consumer credit.[a] The industry is segmented into many small and a few big firms. The most well-known credit bureaus, Equifax, Experian, and TransUnion, enjoy universal coverage of consumer borrowers in the U.S.

The four largest consumer credit bureaus alone accounted for over half of industry receipts in 1997. These large firms concentrate on high-volume businesses — lenders seeking credit file information thousands or even millions of times a year. Some offer credit scoring and other risk assessment tools and fraud detection services, which attempt to limit losses by detecting anomalies in consumers' credit files. The largest bureaus offer *pre-screening* services that enable firms to send the billions of solicitations for credit cards or insurance delivered by mail each year.[b] They are also important players in direct marketing, generating targeted mailing lists and, in some cases, printing and mailing billions of items through their own subsidiaries.

[a] This section draws on information from the 1997 Census of Service Industries, the web sites of various credit bureaus, and the web site of the industry's trade association, the Consumer Data Industry Association, or CDIA (http://www.cdiaonline.org). For many decades, and until just recently, this association was known as Associated Credit Bureaus, Inc., or ACB.

[b] Prescreening works in the following way. A lender specifies a set of characteristics it wants a set of borrowers to satisfy. Using its files, a credit bureau identifies those customers who satisfy the criteria and generates a list of names and addresses of people who will receive a credit card solicitation. The Fair Credit Reporting Act requires that every customer found to satisfy the criteria must receive a firm offer of credit. There are also limitations, specified in the Equal Credit Opportunity Act, on the criteria lenders may use when making credit decisions.

participating lenders rather than just a lender's own files.[4]

Potential Customers and Competition. The advantages of access to a credit bureau's information will be greater if lenders frequently encounter potential customers they don't know very much about. Another important consideration is the nature and extent of competition among lenders. But here the effects are less clear cut. Suppose that a given retailer or lender enjoys a large share of its market. Most local residents are already customers and are relatively well known to the firm. Unless there is significant in-migration from other areas, the benefits of sharing information might be small.

Now consider a large city with many small lenders and retailers. The pool of potential new customers will include both newcomers to the area and local residents shopping for a better deal. In that case, lenders might frequently encounter potential new customers. Those customers may also borrow from several lenders at the same time. In that case, every lender would like to know how much a potential customer owes to other lenders before making a loan. So it would seem that a more competitive market is conducive to the formation of credit bureaus.

But there can be a counter-vailing effect if a lender's profits result primarily from knowing its own customers better than its rivals do. Suppose that one or more lenders compete for Bank A's customers. Once again, the problem of adverse selection emerges — loan terms offered by competitors will be relatively more attractive to Bank A's higher risk borrowers than its lower risk ones.

[4] Credit scoring is the process of developing numerical indices of the risk associated with consumers with certain observable character-istics and payment histories. See Loretta Mester's 1997 article in the *Business Review*.

Knowing this, other lenders cannot compete as aggressively for Bank A's customers by offering more credit or more generous terms. But if Bank A's customers find it difficult to obtain better terms from other lenders, Bank A need not offer them the best terms either, allowing it to earn a profit lending to customers it already knows relatively well.

Suppose someone opened a credit bureau. Would lenders agree to join? If they did, each lender would be better equipped to compete for customers currently served by its rivals because the adverse-selection problem would be lessened. But the net effect on profits is ambiguous — lenders might earn additional income lending to customers enticed from their competitors, but they will also have to offer better terms to their existing customers in order to retain their business. If lenders would not earn enough lending to new customers to offset reduced profits earned on their existing customers, they wouldn't voluntarily join the credit bureau.

Alternatively, lenders might agree to share some information with each other, but not everything. For example, lenders might share information about delinquencies or defaults but not about the size of the credit line and the amount actually used. Reporting negative payment information should encourage borrowers to repay their debts, but it might not trigger so much competition that sharing this information would reduce profits.

Joining the Bandwagon. The incentive to join a credit bureau tends to increase with the number of creditors that agree to participate. Economists call this a *bandwagon effect*. Credit bureaus become more useful to lenders as the coverage of potential customers increases. Increased coverage may reduce moral hazard if borrowers are aware that their payment history is available to a larger number of potential creditors. Additional membership in a bureau can also help amortize the fixed cost of setting it up. Each of these factors would tend to result in just a few credit bureaus, perhaps only one, serving a particular market. Today, in most countries that have private credit bureaus, just a few firms account for the vast majority of credit reports generated, and they enjoy nearly complete coverage of the credit-using population.

But the bandwagon effect may not be strong enough to induce all creditors to participate in information sharing or to create a monopoly credit bureau. At a minimum, creditors may choose to share information with more than one bureau in order to stimulate competition and innovation for such services. Also, the historical trend toward concentration is not irreversible. For example, as competitive conditions change, lenders' incentives to continue sharing information may also change.

CREDIT BUREAUS AS BLACK SHEEP?

Consumers care about who has access to their credit reports and the accuracy of the information contained in them. Credit bureaus are concerned about these issues too. But do they weigh the benefits and costs of greater privacy or greater accuracy in the same way most consumers do? The answer is probably not. The resulting tension has been addressed, at least in part, by government regulation.

Privacy. Credit bureaus are information-sharing arrangements that improve the performance of credit, insurance, and other markets. But the flip side of information sharing is a loss of consumer privacy. Sharing a little information about borrowers, such as delinquencies or defaults, ought to generate benefits that exceed the costs associated with any loss of privacy, especially if access to such information is limited. But if access is less well regulated or if information is used for purposes not envisioned by consumers, that case becomes harder to make (see *Credit Reports and Privacy*).

The Quality of Credit Bureau Information. Because no system is perfect, there will always be some errors in credit files (see *Errors in Credit Reports*). But should we expect to see one type of error more frequently than another? The answer is yes. Given that creditors are also the bureaus' primary customers, the standards set by the bureau will likely reflect the interests of creditors. A well-functioning credit bureau will set standards so that the incremental cost of reducing errors contained in credit reports is equal to the reduction in lenders' losses that results from greater accuracy.

Consider a typical lender that is a member of a credit bureau. The lender benefits from access to accurate and timely information provided by other bureau members, but it bears the cost of maintaining the quality of information it provides to other members. Under these circumstances, lenders have an incentive to "free ride" in terms of the quality of the information they provide.[5] The credit bureau can mitigate the free-riding problem by enforcing minimum standards on the quantity and quality of the information members provide.

Broadly speaking, two types of errors can creep into a credit bureau's files: inclusion of inaccurate information and omission of accurate information. Suppose that a credit report contains a reference to a delinquency that, in fact, never occurred. Based on the information in the report, a lender might not extend credit — but it might have, had the credit report been accurate. Consequently, the lender loses interest and fee income it would have earned on that loan.

Alternatively, suppose that a credit report omits the fact that a borrower defaulted on a loan. In this case, a lender might extend credit to this person, but would not have, had the lender been aware of the default. As a result, the lender takes on more credit risk than intended. This type of mistake

[5] That is not to say that lenders do not care about the quality of this information — after all, the data are typically a direct output of their own internal information systems.

Credit Reports and Privacy

The credit-reporting industry has been embarrassed on several occasions by the ease with which people have obtained credit reports when they should not have. For example, a 1989 *Business Week* article described how Vice President Dan Quayle's credit report was obtained under the pretext of making him a job offer. Some deception was required to obtain the report, but a little deception seemed to go a long way.

Under the Fair Credit Reporting Act (FCRA), credit reports may be furnished only for purposes specified in the act, for example, to lenders making a loan decision, insurers underwriting a policy, or employers considering a person for employment.[a] The FCRA does permit prescreening (see *Consumer Credit Bureaus in the U.S.*) without the prior consent of the consumer, but consumers have the right to opt out of this process.[b] A credit report may be used in an employment decision, but only with the potential employee's prior consent. Medical information about a consumer cannot be shared with creditors, insurers, or employers without the consumer's consent.

Under the FCRA, credit bureaus must use *reasonable procedures* to prevent disclosures of consumers' information that violate the act. Users of credit bureau information must identify themselves and the reason why a credit report is being sought. Credit bureaus must make a reasonable effort to verify this information when dealing with new customers.[c]

The FCRA specifies penalties for violations of consumers' privacy. A credit bureau or a user of a credit report found to be in negligent noncompliance with the act is responsible for the consumer's actual damages plus his or her reasonable legal expenses. Punitive damages may be awarded in instances of willful noncompliance. Officers or employees of a credit bureau who knowingly or willfully disclose consumer information to a person not authorized to receive it can be prosecuted. Any person who obtains a consumer report under false pretenses is subject to criminal prosecution and can be sued by the credit bureau for actual damages.

[a] A credit report may also be issued to any person with a legitimate business need arising from a transaction initiated by the consumer or with an existing account with a consumer. An example might be a credit check performed by a prospective landlord.

[b] A single toll-free number (1-888-567-8688) can be used to opt out of prescreening services provided by Experian, Equifax, and TransUnion.

[c] When a consumer report is purchased for resale to an end-user, the identity of the end-user and the proposed use of that report must be provided to the credit bureau.

causes lenders the greatest concern.

But balancing costs and benefits to lenders does not take into account the interests of borrowers, who are not directly customers of the bureau. Borrowers also experience losses from errors: When a loan is denied because of erroneous information in a credit report, the borrower loses the benefit of having the loan.[6] If that loss is not also reflected in weighing costs and benefits, too many errors of this type will occur.

When consumers become aware of mistakes that result in an erroneous denial of credit, they naturally have an incentive to correct those errors. Because they know their own credit history well, it is easier for them to identify errors than it is for the credit bureau. Therefore, one way to improve the accuracy of credit reports is to encourage consumers to dispute errors in their reports, setting in motion a process for rechecking the source and accuracy of the data reported.

Since lenders value more accurate data, we should expect credit bureaus to make some form of dispute process available to consumers. However, lenders bear the cost of this process but enjoy only a portion of the resulting gains. So we can't assume that credit bureaus will devote appropriate resources to the dispute process, especially when the costs of doing so are high.

Given the difficulties in forming a private arrangement between borrowers and credit bureaus, government intervention might produce a better balancing of the costs and benefits of accuracy. For example, the government could set minimum standards for information providers and credit bureaus, as well as for the consumer-dispute process. The U.S. and many other countries have enacted laws with precisely this goal in mind.

[6] More generally, a borrower in this situation may have to accept harsher loan terms or may have to expend time and effort to have an erroneous delinquency expunged from his or her credit file.

THE REGULATION OF CONSUMER CREDIT BUREAUS

In the U.S., the primary mechanism for regulating the activities of consumer credit bureaus is the Fair Credit Reporting Act (FCRA), which was enacted in 1970 and significantly amended in 1996.[7] The primary agency responsible for enforcing the FCRA is the Federal Trade Commission (FTC),

[7] 15 U.S.C §§ 1681-1681(u). A thorough description of the law, together with brochures explaining its obligations in plain English, may be found at the FTC's web site www.ftc.gov.

Errors in Credit Reports

Credit bureaus assemble reports on individuals by linking accounts with the same names, addresses, birthdays, Social Security numbers, and other information that is supposedly unique to the individual. Credit bureaus have developed sophisticated processes to do this, but they are not perfect. Important parts of a person's credit history, such as the payment history on a student loan, may sometimes be omitted. Or erroneous information, such as a delinquency on someone else's account, might be included.

Perhaps no other issue about this industry generates more heated debate than the accuracy of credit reports. For all of that heat, there aren't a lot of data available, and most are old. In 1992, the industry's trade association released results of a study based on a sample of nearly 16,000 applicants, all of whom were denied credit. Relatively few of these people requested a copy of their credit report, but a quarter of those who did disputed something in their report. While we don't know for sure, it is likely that serious errors occurred more frequently among disputed reports than for the whole study sample or the entire population of credit users.[a] In about 14 percent of the disputed reports, the resulting changes were significant enough to reverse the credit decision. In the study, there were only 36 such instances (0.2 percent of the sample). But a simple extrapolation, based on other statistics provided by the same organization, suggests that in the early 1990s, the number of applications for credit mistakenly denied could have been large — in the tens if not hundreds of thousands each year.[b]

[a] The study itself was not made available to the public. The statistics cited here are from a 1992 speech by Barry Connelly of Associated Credit Bureaus, Inc. (ACB).

[b] In testimony submitted to Congress, ACB reported that consumers disputed something in 3 million credit reports in 1989: 13.5 percent of 3 million disputes is 405,000. See the 1989 hearings. It should be noted that not all of the 3 million reports disputed in 1989 occurred after a denial of credit, and this may imply that the 405,000 number is too high. But we don't know by how much.

but other federal agencies (including the Federal Reserve Board) are responsible for enforcing the act among firms they regulate.[8]

In many ways, this law is an attempt to refine the balance between the obvious benefits credit bureaus generate and consumers' legitimate concerns over accuracy and privacy. The FCRA creates obligations for credit bureaus, users of credit reports, and credit bureau members. The duties of lenders and other information providers are relatively modest — to avoid furnishing information known to be erroneous and to participate in the process of correcting errors identified by consumers. This increases the quality of information provided to credit bureaus without significantly raising the cost of sharing the information. Regulation should not raise these costs to the point where information providers drop out, a situation that would undermine this voluntary mechanism for sharing information.

Similarly, inaccuracies in credit files do not violate the FCRA. Rather, the act requires bureaus to use *reasonable procedures to ensure maximum possible accuracy*. This standard is satisfied if the bureau adopts procedures a reasonably prudent person would use under the circumstances. These procedures, in turn, depend on a balancing of the incremental benefits and costs of attaining higher levels of accuracy.[9] This balancing of benefits and costs may change over time as advances in technology make it easier for bureaus to adopt ever more powerful computers and software.

8 Under the act, state attorneys general may sue on behalf of their residents. In addition, certain state laws provide consumers with additional rights.

9 These interpretations are found in the 1982 case *Bryant v. TRW, Inc.* 689 F.2d 72 and the 1989 case *Houston v. TRW Information Services, Inc.* 707 F. Supp. 689.

The FCRA also encourages consumers to correct errors in their reports. The cost to consumers of obtaining their own reports is limited by regulation. The cost is free whenever information contained in a credit report has contributed to an adverse decision affecting the consumer — precisely the circumstance in which an error may be more costly. The FCRA requires users of credit bureau information to remind consumers of their right to obtain and, if necessary, correct their credit reports. The act sets a time limit for reinvestigations to be completed, at no cost to the consumer, and includes a number of mechanisms for ensuring that any corrections are disseminated to other credit bureaus and users of the report in question.

This is not to say that the FCRA has attained the ideal balancing of benefits and costs that might be achieved. Consumer groups remain concerned about the problems of accuracy and privacy and, in some areas, question whether the act is adequate.[10] Numerous congressional hearings in the late 1980s and early 1990s culminated in amendments, enacted in 1996, that significantly strengthened consumer protections. Thereafter, the FTC sued a number of credit bureaus, alleging they were devoting inadequate resources to the consumer-dispute process.[11] At the same time, continued improvements in computer and communications technology have reduced the cost of investigating alleged errors and correcting them when found.

10 See Edmund Mierzwinski's April 2001 testimony and Jon Golinger and Edmund Mierzwinski's 1998 report, for the Public Interest Research Group, on the accuracy of credit reports.

Numerous congressional hearings in the late 1980s and early 1990s culminated in amendments, enacted in 1996, that significantly strengthened consumer protections.

WHAT LIES AHEAD?

In the U.S., the two-tier industry structure — a few giant credit bureaus with national coverage serving high-volume customers and many smaller bureaus serving specific niches or reselling data to low-volume customers — is likely to mature while adapting to new forms of delivery, for example, the Internet. Advances in predictive modeling such as credit scoring will likely increase the value of information contained in credit bureau files. But the industry also faces new challenges from governments as well as their own customers.

Challenges from Governments. The industry faces the prospect of more intense scrutiny and possibly regulation. In 2001 the FTC succeeded in restricting the use of certain data in consumer credit reports to generate target marketing lists used to sell nonfinancial products to consumers. The FTC also succeeded in applying the financial privacy requirements of the Gramm-Leach-Bliley Act to credit bureaus' "look-up" services, whereby a person's name and other identifying information are matched with a current address or phone number contained in

11 In January 2000, the FTC announced a settlement, involving the three largest credit bureaus, that requires them to adequately staff the toll-free lines used by consumers seeking information about their credit reports.

credit files.[12] And while the 1996 amendments to the Fair Credit Reporting Act limited the ability of states to enact new, more restrictive legislation affecting credit bureaus, those limits expire in 2004.

Challenges from Lenders. For a brief period in the late 1990s, lenders accounting for one-half of all consumer credit ceased reporting certain information (credit limits and high balances) on at least some of their credit card accounts. Financial regulators warned lenders their underwriting systems might be compromised by incomplete credit bureau information.[13] The leading credit bureaus responded by announcing they would limit access to their databases for lenders providing incomplete credit histories. Thereafter, these lenders began to send more complete credit information to the bureaus.

This behavior might be a reaction to a period of intense competition among credit card lenders. During this period, an increasing share of consumers' unsecured debt was held on the books of a few lenders. In just five years (1996-2000), the share of bank credit card balances held by only 10 institutions increased from 43 percent to 63 percent. These banks are the principal source of information about consumers' payment habits for bank cards, as well as the principal source of potential new customers. And during those five years, consumers were inundated with offers of credit card accounts that carried low introductory interest rates on balances transferred from other banks. This episode is a reminder that lenders may not always choose to share information about their borrowers. BR

12 See *TransUnion Corp. v. Federal Trade Commission*, 245 F.3d 809 and *Individual Reference Services Group, Inc. (IRSG), v. Federal Trade Commission et al.*, 145 F. Supp. 2d6. Credit bureau activities may also be affected by the European Privacy Directive, which is generally more restrictive than U.S. law. This directive is reviewed in Fred Cate's book.

13 See the articles by Lisa Fickensher and the one by Lucy Lazarony. See also the advisory letter issued by the Federal Financial Institutions Examination Council.

REFERENCES

Akerlof, George A. "The Market for 'Lemons': Quality, Uncertainty, and the Market Mechanism," *Quarterly Journal of Economics*, 84,1970, pp. 488-500.

Ausubel, Lawrence M. "Adverse Selection in the Credit Card Market," mimeo, Department of Economics, University of Maryland, 1999.

Cate, Fred H. *Privacy in the Information Age*. Washington, DC: Brookings Institutions Press, 1997.

Cole, Robert H., and Lon Mishler. *Consumer and Commercial Credit Management*, 11th ed. Boston: McGraw-Hill, 1998.

Connelly, D. Barry. "Announcement of the Credit Report Reliability Study," text of speech before the National Press Club (February 4, 1992).

Fair Credit Reporting Act, Hearings before the House Subcommittee on Consumer Affairs and Coinage of the Committee on Banking, Finance and Urban Affairs. 101st Congress, 1st Session (September 13, 1989).

Federal Financial Institutions Examination Council Advisory Letter, "Consumer Credit Reporting Practices" (January 18, 2000).

Fickenshe, Lisa. "Credit Bureaus Move Against Lenders That Withhold Info," *American Banker*, 149 (December 30, 1999), p. 1.

Fickenshe, Lisa. "Lenders Hiding Credit Data and Regulators Object," *American Banker*, 149 (July 7, 1999), pp. 1,7.

Golinger, Jon, and Edmund Mierzwinski. "Mistakes Do Happen: Credit Report Errors Mean Consumers Lose," Washington: Public Interest Research Group, 1998. www.pirg.org/reports/mistakes (accessed 10/15/2001).

"Is Nothing Private?" *Business Week* (September 4, 1989), pp. 74-82.

Jappelli, Tullio, and Marco Pagano. "Information Sharing in Credit Markets: The European Experience," CSEF Working Paper No. 35 (2000).

Jappelli, Tullio, and Marco Pagano. "Information Sharing, Lending and Defaults: Cross Country Evidence," CSEF Working Paper 22 (1999).

Klein, Daniel B. "Promise Keeping in the Great Society: A Model of Credit Information Sharing," in Daniel B. Klein, ed. *Reputation: Studies in the Voluntary Elicitation of Good Conduct*. Ann Arbor, MI: University of Michigan Press, 1997.

Lazarony, Lucy. "Lenders Defy Credit-Reporting Crackdown, Hoarding Data that Could Save You Money," *Bankrate.com*, posted April 28, 2000 (accessed September 28, 2001).

Mester, Loretta. "What's the Point of Credit Scoring?" Federal Reserve Bank of Philadelphia *Business Review* (September 1997), pp. 3-16.

Mierzwinski, Edmund. Prepared Statement in *An Examination of Existing Federal Statutes Addressing Information Privacy*, Hearings before the House Subcommittee on Commerce, Trade, and Consumer Protection of the Committee on Energy and Commerce. 107th Congress, 1st Session, (April 3, 2001).

Padilla, A. Jorge, and Marco Pagano. "Sharing Default Information as a Borrower Discipline Device," *European Economic Review*, 44, 2000, pp. 1951-80.

Padilla, A. Jorge, and Marco Pagano. "Endogenous Communication Among Lenders and Entrepreneurial Incentives," *Review of Financial Studies*," 10,1997, pp. 205-36.

Pagano, Marco, and Tullio Jappelli. "Information Sharing in Credit Markets," *Journal of Finance*, Vol. XLVIII (1993), pp. 1693-1718.

The Privacy Protection Study Commission. *Personal Privacy in an Information Society*. Washington: U.S. Government Printing Office, 1977.

Stiglitz, Joseph E., and Andrew Weiss. "Credit Rationing in Markets with Imperfect Information," *American Economic Review*, 71,1981, pp. 393-410.

U.S. Bureau of the Census. *1997 Economic Census, Administrative and Support and Waste Management and Remediation Services*. Washington: U.S. Government Printing Office, 2001.

U.S. Bureau of the Census. *Census of Service Industries*. Washington: U.S. Government Printing Office, various years.

U.S. Bureau of the Census. *Current Business Reports, Service Annual Survey: 1999*. Washington: U.S. Government Printing Office, 2001.

Vercammen, James A. "Credit Bureau Policy and Sustainable Reputation," *Economica*, 62,1995, pp. 461-78.