ON THE IMPACT OF CREDIT PAYMENT REPORTING ON THE FINANCIAL SECTOR AND OVERALL ECONOMIC PERFORMANCE IN JAPAN

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Table of Contents

ABSTRACT

This study compares the Japanese consumer credit reporting regime with a hypothetical comprehensive one. Impacts of the varying regimes - each with different types and amounts of payment information available to creditors - upon access to credit and default rates, growth in lending to the private sector and overall economic growth are examined. Japan's fragmented reporting system is characterized by sector segmented information where, for example, only banks can access all payment information on bank loans, only retailers can access all payment information on retail credit, and so on. In addition, participation in the credit reporting system varies considerably and the quality of the data that is available is questionable.

We first report the results of a statistical estimate of the consequences of variations in credit reporting systems across countries on private sector lending as a share of Gross Domestic Product (GDP). Specifically, we find that every 10 percentage point rise in the coverage of a nation's population with full-file (that is of both positive and negative payment data) credit files in a private credit bureau's database is associated with a 6 percent increase in private sector lending as a percentage of GDP. By one estimate, this level of improved full-file coverage could lead to an increase in the annual rate of growth of Japan's GDP by 0.33 percentage points.

The study further demonstrates the importance of participation in a private full-file credit reporting system through a series of micro-simulations. We use Canadian credit files and a generic scoring model to simulate the impact of the variation in credit reporting as found in Japan and compare the results to that which would be obtained were information more comprehensive (or multi-sectoral), full-file (positive and negative), and universal (obtained from all sources). We also examine the impact of varying "participation rates." That is, when some lenders report fully to a private credit bureau, while others report only negative payment information.

Our findings strongly suggest that reform towards the direction of a comprehensive consumer credit reporting system with widespread participation would greatly improve economic and financial performance in Japan. Improvements in information available to lenders via credit reports should also lead to better, more appropriate lending (fewer defaults). Improving lending through improved information is also likely to achieve this desired outcome with fewer unintended negative consequences (including a large reduction in overall lending) compared to the very blunt instrument of government regulations, such as restrictions in lending to individuals based on the individual's income.

KEY FINDINGS

Consumer credit reporting reform would increase lending to the private sector. Bank lending to individuals and small and medium sized businesses accounts for around 70 percent of all bank loans in Japan. Consumer credit files are not only instrumental in lending to individuals (for everything from card purchases to mortgages) but can be very useful in lending small businesses, particularly so the smaller the business and for start-ups. This is true since the financial prospects of a small business or start-up (in which little reliable and publicly available financial information exists) are closely related to the financial prospects of the small business owner or entrepreneur (whose payment histories are usually more available). The current system of consumer credit reporting in Japan is characterized by fragmented and incomplete data sharing arrangements. Lenders heavily rely on negative or derogatory credit data and relationship banking. Assuming the most optimistic reading of the state of Japanese credit reporting, if Japan were to adopt a full-file credit reporting system-where both positive and negative payment data are shared across sectors-and most lenders participated, then lending to the private sector could grow as much as 20 percent. By one estimate, this could lead to an increase of .67 percentage points in Japan's annual gross domestic product (GDP) growth rate. Productivity and capital stock growth rates would also increase by an estimated 0.5 percent annually.

Greater access to affordable mainstream credit. If Japan were to implement a consumer credit reporting regime change, and adopt a full-file credit reporting system with a high creditor participation rate, Japanese consumers would have greater access to affordable credit from reputable lenders. This should reduce the size of, or at least the growth of, the black market in Japan and positively affect the lives of millions of Japanese. For a target default rate of 2 percent, it is estimated that as many as 7.45 million Japanese borrowers are currently shut out of the mainstream national credit system. These are individuals who are otherwise creditworthy and would make timely payments but must go without credit or rely on unscrupulous lenders in the black market because lenders cannot accurately assess their credit risk, credit worthiness, and credit capacity using available credit bureau information. Furthermore, these estimates are likely to be conservative as they are based on consumers with relatively larger credit files, specifically consumers with at least five tradelines. If we include so-called "thin-file" borrowers, this number could easily exceed 10 million persons unnecessarily denied access to mainstream credit owing to the fractured and inefficient Japanese credit reporting system.

Credit reporting reform reduces risk for Japanese lenders and overlending to Japanese borrowers. The use of fully-reported bank and non-bank financial data in consumer credit reports increases the ability of lenders to distinguish between good and bad risk borrowers. Lending would increase to borrowers who can manage repayment and would decrease to those who cannot. As a result, for a given acceptance rate or market size, the default rate would be substantially lower than is the case using credit data currently available from credit bureaus in Japan. Comprehensive, full-

file reporting should thus help diminish the likelihood of consumers falling into financial trouble and lessen the social ills resulting from such personal financial trouble. At a 70 percent acceptance rate, a Japanese lender using full-file credit reports would have a default rate that is between 9 to 26 percent lower than a lender using any of the incomplete or negative-only credit reports currently used in Japan. Assuming the average level of obligations (excluding mortgages and land loans), we estimated that with full file, comprehensive reporting the size of delinquent loans would be between 48.8 billion and 141 billion yen smaller. And again, these estimates are likely to be conservative as they are based on consumers with relatively larger credit files. A better performing loan portfolio also increases a Japanese lender's profit margins, and increases the amount of capital for loans given capital adequacy requirements in Basel II.

Credit reporting reform enables fairer lending. Using more complete fully reported credit tradelines enables lenders to sharply reduce the quantity of misidentified borrowers. Absent sufficient credit history information, lenders may identify a prospective borrower as being a good credit risk when in fact they are a high risk borrower (a Type 1 error). Potentially even worse, some lenders may deny a prospective borrower credit because, using available information, they are judged to be too high of a risk although in actuality they are low risk and responsible borrowers (a Type 2 error). Denying a credit worthy applicant access to credit based on incomplete or inaccurate data is a form of discrimination. And similarly, many low risk borrowers are lumped together with high risk borrowers, again due to insufficient information to distinguish the two, resulting in unfairly high interest rates for the low risk borrowers as they are forced cross-subsidize the costs of the greater rates of defaults of high risk borrowers. The results of the simulations in this report found that Japanese lenders could conservatively reduce Type 1 errors by 27 percent and Type 2 errors by 4 percent by using full-file credit data rather than the incomplete and fragmented reports that are currently available from Japanese credit bureaus. We estimate that between an additional 320,000 and 670,000 Japanese consumers who are good risks would not receive loans.

Lenders using superior information will likely lead to better overall outcomes than crude government lending restrictions. Crude “one size fits all” formulas, perhaps based on a borrower's income, are likely to be less efficient at reducing over-indebtedness, defaults, and bankruptcies than bringing to the market more accurate information on borrowers. Much work has gone in to developing sophisticated models that gauge a person's ability to handle debt obligations. Given the requisite amount and type of data, these models should do a more effective job than simplistic government mandated formulas in determining appropriate lending levels. In particular, greater and safer lending as a result of improved information avoids the common pitfalls of unintended consequences often associated with government regulation. In this case, the pitfalls include reducing lending to deserving borrowers and strengthening the position of the black market.

INTRODUCTION: THEORY AND LITERATURE

Asymmetric Information and Lending Markets

This study examines how the institutional features of the Japanese credit reporting systems fare when considered against the benchmark of a universal, full-file, and comprehensive system. By universal, full-file and comprehensive, we mean (i) there is extensive participation, (ii) both positive and negative payment information is reported, and (iii) information from all reporting sectors is available to those who extend credit and credit-like services. The fragmented reporting systems found in Japan lack these elements in varying degrees. Below, we estimate the economic consequences of these variations in credit payment reporting.

To understand the impact of credit reporting it is important to note that credit bureaus are institutional responses to the problem of information asymmetries in lending. Long ago, Ronald Coase suggested that if there are costs to transacting then markets yield sub-optimal outcomes, that is, ones that do not exploit all trades.[1] These "transactions costs" comprise the cost of searching, contracting, monitoring, and enforcing a market exchange. Perhaps most of these costs stem from the lack of information and the price of gathering it. Coase's objective was to explain the firm and other institutional forms we find in the market. In the context of financial markets, the costs of acquiring information on the risk profile of borrowers can result in non-trades, or non-offers of credit. Credit is "rationed", that is, among a pool of observationally identical borrowers, some get credit and others do not. Since Coase, a host of theoretical and empirical studies have helped to explain what credit reporting accomplishes (reducing information asymmetries and the moral hazard that results from it) for markets in lending. Consequently, credit reporting is widely seen as an integral part of well-functioning credit markets.

In extending a loan, a lender faces the problem that only a borrower precisely knows her intention and capacity to repay. The lender must, therefore, infer the risk profile of the borrower. Borrowers have incentives to misrepresent their risk profile. Even when borrowers are truthful, the lender must still evaluate the claims. This type of assessment is crucial because a loan involves an agreement to pay in the future, a fact that has far reaching consequences for lending markets.

Economist George Akerlof examined the consequences of asymmetrical information in a market for goods.[2] When the quality of particular goods in a market is of unknown quality to buyers, buyers are forced to assume any particular good is of average quality. Over time, this will then lead to goods of above average quality being driven out of the market, since they will only garner the price of an average good. As this continues, the viability of the market for the good will be threatened. The riskiness of a borrower can be thought of as the "good" that the lender "purchases". To demonstrate this, Akerlof applied the theory of asymmetric information to explain stunted credit markets in India.

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1 Coase, Ronald H. "The Nature of the Firm." Economica, November 1937, 4, pp. 386-05.

2 Akerlof, George. 1970. "The Market for Lemons." Quarterly Journal of Economics. 84 (3): 488-500.

Joseph Stiglitz's and Andrew Weiss' (1981, 1992) work is the best known in the study of the consequences of information asymmetries in lending. They suggested that even in a competitive equilibrium, loan markets can witness credit rationing because of insufficient information (1981). Given information asymmetries,[3] banks rely on a combination of pricing (interest rates) and rationing to maximize returns.[4] However, higher interest rates, while covering the risk of borrower default, are also likely to result in *adverse selection*. That is, higher interest rates attract borrowers seeking to make risky investments with the potential for high rates of return. The price mechanism alone might not clear loan markets because as interest rates increase to compensate for rising risk, riskier applicants are attracted. Moreover, some borrowers will have an incentive to make riskier investments to cover the price of credit. Furthermore, once a loan is made, some borrowers may have incentives not to pay because without information sharing, they can still obtain loans from other lenders. (Collections on loans involve costs, which can vary with the rights of creditors in an economy.)

Faced with this moral hazard (the relative lack of penalty for non-payment) and with the problem of adverse selection (higher interest rates attracting riskier borrowers, or making borrowers take more risks) that stem from asymmetric information, lenders will ration credit.[5] Jaffee and Russell similarly showed that asymmetric information in lending markets can lead to credit rationing, financial instability, or excessive (non-market clearing) prices depending on the structure of competition.[6]

Information Sharing as a Solution to Asymmetric Information

Jaffee and Russell concluded their examination with a suggestion that more attention be paid to the non-price institutional features of the loan market "to discover if there may be alternative and better arrangements."[7] Information sharing has been the most prominent institutional solution to the problems that result form asymmetric information. Credit bureaus or registries are the mechanism through which information on borrowers is

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3 That is, borrowers are better aware of their true capacity and willingness to repay than lenders. In the absence of information about the borrower except what the borrower provides, lenders face the problem of accurately judging the quality or credit worthiness of a borrower when the loan is made and will only discover it over time after credit is extended.

4 Joseph Stiglitz and Andrew Weiss. "Credit Rationing in Markets with Imperfect Information," 1981.

5 Marco Pagano and Tullio Japelli. "Information Sharing in Credit Markets." Journal of Finance. December, 1993: 1693-1718.

6 Jaffee, Dwight and Thomas Russell, 1976. "Imperfect Information, Uncertainty and Credit Rationing." Quarterly Journal of Economics. 90 (4) 651-666.

7 Jaffee, Dwight and Thomas Russell, 1976. "Imperfect Information, Uncertainty and Credit Rationing." p. 665.

shared by lenders in an economy. Credit bureaus present information about a prospective borrower's past credit history, amount of current debt, and other information, which is used to more accurately assess credit worthiness, capacity, and risk. Furthermore, by affecting a borrower's future ability to access loans, credit registries create an incentive to pay on time and thereby help reduce moral hazard problems.

Empirical studies of credit reporting are relatively recent. The earliest econometric work on information sharing found that credit registries increase private sector lending. Pagano and Japelli showed that private sector lending is greater in countries with credit registries.[8] They also found that overall risk in countries with credit information sharing was approximately *one-third* lower than in countries with little or no credit information sharing.[9] Kallber and Udell, using Dunn and Bradstreet information on business credit histories, found that credit registry information was more predictive of small-business loan performance than detailed information in firm financial statements.[10]

A 2002 Inter-American Development Bank/World Bank survey of approximately 200 banks in Bolivia, Brazil, Chile, Colombia, Costa Rica, El Salvador and Peru found that those banks which used private bureau files and primarily lent to consumers or small or medium enterprises saw lower rates of non-performance in their loan portfolios than those banks which did not use bureau data or used public registry data.[11] A more recent World Bank report and report confirmed the overall findings of the 2002 IADB/World Bank survey.[12]

Subsequent studies have also evaluated whether the inclusion of positive data in a credit report has an effect on the distribution and price of credit. Economists John Barron and Michael Staten found that the use of comprehensive credit information-positive and negative credit history-enables lenders to increase lending while better managing their risk. In their simulations, Barron and Staten found that for any given acceptance rate, the use of comprehensive credit information in a generic scoring model yields a portfolio of loans with markedly fewer delinquencies and defaults.[13] By symmetry, for any given default rate, lenders using comprehensive

8 Marco Pagano and Tullio Japelli. “Information Sharing in Credit Markets.”

9 Marco Pagano and Tullio Japelli. “Information Sharing in Credit Markets.”

10 Kallberg, Jarl and Gregory Udell, "Private Business Information Exchange in the Unites States." pp. 203-228 in Margaret Miller ed., Credit Reporting Systems and the International Economy. (Cambridge, MA: MIT Press, 2002)

11 IADB, IPES 2005: Unlocking Credit: The Quest for Deep and Stable Bank Lending. (Washington, DC: IADB, 2004) p. 178. http://www.iadb.org/res/ipes/2005/index.cfm.

12 World Bank, Doing Business in 2004: Understanding Regulation. (Washington, DC: World Bank, 2004) pp. 59-61.

13 John M. Barron and Michael Staten. "The Value of Comprehensive Credit Reports: Lessons from the U.S. Experience." pp. 273-310 in Margaret M. Miller ed., Credit Reporting Systems and the International Economy. (Cambridge, MA: The MIT Press. 2003) pp. 290-291.

credit reports would be able to grant far more loans than lenders restricted to using only negative information when assessing credit risk.[14] These findings have been reproduced by subsequent studies conducted by ACIL Tasman, Margaret Miller, the Inter-American Development Bank, our own studies, as well as those of several others.

While the first generation of empirical economic research on the role of credit information in credit markets provided a compelling case for the important role played by credit bureaus in credit markets (reduced overall risk and promoted growth in private sector lending), second generation empirical economic research has demonstrated that the ownership structure of a credit bureau (public v. private) and the scope of credit data used in lending decisions (comprehensive v. negative only or less robust credit data) are significant variables when considering the growth and health of national consumer credit markets. These treatments have further examined issues confronted by policy makers, for example, the reporting of only delinquencies, or the length of time defaults may be kept on file. These formal aspects (such as business practices and regulations) of reporting systems are key to the performance of the finance sector (see below). However, these rules and standard operating practices are only one side of the system.

The other side is participation in the reporting system. In most countries, the reporting of elements beyond non-performing loans, usually for loan amounts above a specified threshold, is voluntary. In fact, whether furnishers provide any information, some positive information and not others, or all positive and negative information is most often left to their discretion. In some recent studies, we have examined the impact of varying rates of participation in the full-file system. We found that greater participation greatly enhances loan portfolio performance and market size.

In our examination of the Fair Credit Reporting Act in the United States, we simulated the effect of reducing the quantity of information provided to credit bureaus.[15] That study found that as furnishers dropped out of the reporting system, the ability of scoring models to tell good risks from bad ones worsens, with the consequence that the trade-off between market size (acceptance rates) and delinquency rates worsens, and does so in ways that disproportionately impacts the young and minorities.
The theoretical literature has examined the issue of participation in historical examinations of the evolution of credit reporting systems and norms. It identifies steps for enhancing participation. For example, lenders, for fear of competition or poaching, may underreport or mislead in the

14 John M. Barron and Michael Staten. "The Value of Comprehensive Credit Reports: Lessons from the U.S. Experience." p. 296.

15 We used a random sample of 3.6 million anonymized credit files and commercial-grade generic scoring models to simulate the impact of lower participation on financial performance. Scenarios A and B in the various simulations in Michael Turner et al., The Fair Credit Reporting Act: Access, Efficiency & Opportunity. (Washington, DC: The National Chamber Foundation, June 2003) passim. Available also online at http://infopolicy.org/pdf/fcra_report.pdf.

information they provide. In response to this, Pagano and Padilla argue that bureaus counter this incentive by penalizing those lenders that provide inaccurate or incomplete information by, in turn, providing them with inaccurate or incomplete information on their competitor's customers. In other words, bureaus ensure that lenders get from the system exactly what they put into it, and that no firm can game the system to their advantage. They further argue that the norm of "reciprocity" reduces the risk of moral hazard linked to underreporting.

CREDIT REPORTING, THE FINANCIAL SECTOR AND ECONOMIC DEVELOPMENT

Financial Sector and Economic Development

The importance of a credit reporting system and its qualities to the financial system has been examined extensively in recent years, as noted. Implicit in all of these studies, including this one, is the claim that a well-functioning financial system is crucial for the well-being of an economy. The financial system mobilizes savings, pools capital, manages risk, facilitates trade, and monitors investment. In so doing, it fosters growth and innovation. One key element of this process is the ability of financial systems to gather and deploy information. Its ability to do so depends on a few factors, but especially on the reduction of information and other transaction costs. Banks fulfill this function to some extent, but credit bureaus have emerged as specialized institutions that reduce the costs of information gathering, sharing and use. Credit bureaus, like other financial intermediaries, arise in order to minimize the "friction" in the system.

The research on finance and growth is extensive.[17] Multi-country estimates show that economies with larger financial sectors (under various measurements) have higher rates of growth, greater productivity increases, and faster growing capital stocks. The chains are theorized to be direct (allocation of capital to productive investments) and indirect (facilitating exchange, permitting greater corporate control over managers). The consumer credit reporting system is clearly only one part of the system, relating as it does to risk assessment and credit allocation among

16 Marco Pagano and Jorge Padilla. "Endogenous Communication among Lenders and Entrepreneurial Incentives." The Review of Financial Studies 10, No. 1 (Spring, 1997): pgs. 205-236.

17 Walter Bagehot believes that England beat out its competitors not because it had more capital than its competitors but because it could mobilize it better. Also see R. G. King and Ross Levine, "Finance, Entrepreneurship, and Growth: Theory and Evidence", Journal of Monetary Economics. Vol. 32 (1993). pp. 513-542; R. Levine and S. Zervos, "Stock Markets, Banks, and Economic Growth", American Economic Review, Vol. 88 (1998) pp. 537-558; Ross Levine, "Financial Development and Economic Growth: Views and Agenda" Journal of Economic Literature, Vol. 25(June 1997), pp. 688-726; Jose De Gregorio and Pablo Guidotti, "Financial Development and Economic Growth." World Development, Vol. 23, No. 3, (March 1995) pp. 433-448; J. Greenwood and B. Jovanovic (1990), "Financial Development, Growth, and the Distribution of Income", Journal of Political Economy. Vol. 98 (1990) pp. 1076-1107; J. H. Boyd and E. C. Prescott (1986), "Financial Intermediary-Coalitions", Journal of Economics Theory. Vol. 38 (1986) pp. 211-232; F. Allen, "The Market for Information and the Origin of Financial Intermediaries", Journal of Financial Intermediation, Vol. 1 (1990) pp. 3-30.. R. T. S. Ramakrishnan and A. Thakor, "Information Reliability and a Theory of Financial Intermediation", Review of Economic Studies, Vol. 51 (19854) pp. 415-432.

consumers and small businesses, whose finances are quite often coincidental with the personal finances of their principals. Other factors such as the stock and bond markets are also significant.

There is ample evidence that private sector lending as a share of GDP impacts overall economic well-being on a number of dimensions.

In cross-country estimations, Ross Levine found that an increase in private sector lending by 30 percent of GDP can be expected to witness an increase in GDP growth by 1 percent per annum, and increases in productivity and capital stock growth by 0.75 percent per annum.[18] This is a conservative estimate compared with many others, and should be considered in the context of our findings concerning the impact of higher participation rates in private full-file credit bureaus upon growth in private sector lending as a ratio of GDP. (See below.)

There are a few mechanisms by which increased private sector lending leads to greater economic growth. Many of them were discussed above. There are two that should be further considered in the context of full-file consumer credit reporting. The first is the impact of full-file reporting on small business formation, and the second is the consequences for monetary policy.

There is ample evidence from several economies that the personal profile of the owner is one crucial determinate of small business lending (the other determinate being transactional factors such as financial statements and assets). How a personal profile impacts small business lending depends on the institutional features of the economy. For example, in economies with little information sharing, the lender assesses qualitative aspects of a business owner, such as business acumen and integrity, and extends loans on the basis of these qualities. This is often termed “relationship lending”. The downside of relationship lending is that it limits the pool of capital available to a business owner to the bank(s) with which he or she has an existing tie, and it often limits the bank in serving those with whom it is familiar. Collateral may substitute for reputation, though the presence of collateral may not substitute the need for monitoring.[19] There is evidence that vibrant small business activity in Japan has required the use of public credit guarantees, and that small business activity would be lower and less efficient in its absence.[20]

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18 Ross Levine, “Financial Development and Economic Growth: Views and Agenda.” p. 706. R. G. King and Ross Levine, “Finance, Entrepreneurship, and Growth: Theory and Evidence” find similar outcomes.

19 See Arito Ono and Iichiro Uesugi "The Role of Collateral and Personal Guarantees in Relationship Lending: Evidence from Japan's Small Business Loan Market" Research Institute of Economy, Trade and Industry (RIETI) Paper Series 05-E-027 (2005). www.rieti.go.jp/jp/publications/dp/05e027.pdf

20 Iichiro Uesugi, Koji Sakai and Guy M. Yamashiro, “Effectiveness of Credit Guarantees in the Japanese Loan Market.” Research Institute of Economy, Trade and Industry, Paper Series 06-E-004 (2006)

Other economies such as the United States also witness the widespread use of personal profiles for small business, but much of this information is not "soft", or based on long bank-borrower relations. Rather, the personal credit history of the owner serves to access both business and personal loans for small business activity and credit. One reason is that personal credit is often taken out for small business activity. Some 48.2 percent of small businesses surveyed by the US Federal Reserve used personal credit cards to finance their activity.[21] This is especially true of younger firms, which due to a lack of history and other reasons could not access small business credit. As firms get older and more established, they're weaned off of personal credit for small business loans, but the net effect is that personal credit plays a significant role in small business formation. In fact, a few studies have found that the credit profile of the business owner is a better predictor of business loan performance than financial statements and balance sheets.

Small business formation is a crucial component of economic health as a large share of employment is accounted for by small businesses in most advanced economies. Small business formation thus plays a crucial role in growth and macroeconomic performance. This is one mechanism through which information sharing affects economic growth and the course of economic cycles. The importance of such information sharing and small businesses to the Japanese economy should not be underestimated. Ninety-five percent of enterprises in Japan are small, employing fewer than 30 employees, and such enterprises employ over half the private sector workforce.[22]

A second mechanism is more direct. Stiglitz and Weiss (1992) identify this more direct relationship between macro-economic performance and credit reporting. Recall that confronted with asymmetric information about borrowers, lenders have an incentive to ration credit. One obvious conclusion is that this lack of information leads to less lending in the economy. A less obvious consequence is that with credit rationing, monetary policy becomes less effective. Stiglitz and Weiss formally show that, with credit rationing, monetary policy is likely to have a weak impact in recessionary periods.[23] That is, if banks ration in the face of information asymmetries, an increase in the money supply may *only weakly increase* available credit in the system. Simply put, the money supply and the availability of credit, though linked, are different beasts. The determinants of credit availability affect the degree to which an increase in the money supply leads to greater investment and thereby higher income. Monetary policy in these circumstances may be far less effective during a recession than in a boom. Furthermore, the effects of monetary policy vary by sector, according to the extent that the sector is leveraged, such as in construction.

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21 SBA, Office of Advocacy, "Financing Patterns of Small Firms: Findings from the 1998 Survey of Small Business Finance." (Washington, DC: Office of Advocacy, SBA, September 2003) p. 19 and passim.

22 Figures from Japan Statistical Yearbook (http://www.stat.go.jp)

23 Stiglitz, Joseph and Andrew Weiss. (1992). Asymmetric Information in Credit Markets and its Implications for Macro-economics, Oxford Economic Papers 44 (4): 694 - 724.

In this light, information sharing expands the impact of monetary expansion and lower interest rates in the wake of economic downturns. By reducing the extent of credit rationing, information sharing allows cheaper credit to actually "hit the ground" and find its way to the hands of consumers (for consumption) and, in light of the above, small business entrepreneurs.

It was noted above that a wide body of research has shown that greater private sector lending results in greater GDP growth. Below we will demonstrate that comprehensive, full-file credit reporting is associated with significantly greater private sector lending. These mechanisms and their dynamic, as well as their greater impact, should be kept in mind.

The Legal and Regulatory Environment and Credit Reporting

The legal and regulatory environment in which information sharing takes place greatly impacts the structure and development of credit reporting. While of course, the law could preclude the operation of a credit registry altogether, this is rare. The most common manner in which regulations or the law act as an impediment to credit reporting is by either proscribing the reporting of certain types of data, or by requiring data to be purged from a consumer's file after a certain period of time. While these rules fall under the rubric of consumer rights, and specifically, privacy rights, they often work to the detriment of consumers. Namely, restrictions on the quality and quantity of the data contained in credit reports diminishes the accuracy of the predictions and decisions that lenders make on the basis of the reports. [24]

One of our principal concerns in this paper is the degree to which credit reporting is "full-file", the degree to which credit reports contain "positive" as well as "negative" data. In the United States, credit reporting is governed by a comprehensive federal law, the Fair Credit Reporting Act (FCRA). The FCRA addresses both consumer privacy, by restricting the disclosure of data to "permissible purposes", and data accuracy, by allowing consumers to dispute information they believe to be inaccurate and by making furnishers and bureaus accountable for data quality. This approach, characterized by some as a "harms-based" - as opposed to a "rights-based" - has been largely successful in the US context.[25] The European Union has taken a somewhat different approach to issues of data protection than the United States: its 1995 EU Data Protection Directive compelled member states to adopt laws that bar the onward transfer of personal data, including the types of information contained in a credit report, without the explicit consent of the subject of that data.

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[24] Michael A. Turner. Access, Efficiency, and Opportunity. (Washington, DC: The National Chamber Foundation, June 2003).

[25] For discussion of the "harms vs. rights" distinction see Peter P. Swire and Robert E. Litan, None of Your Business: World Data Flows, Electronic Commerce, and the European Privacy Directive (Washington, D.C.: Brookings Institution Press, 1998). For a discussion of the economic benefits of the FCRA, see Michael A. Turner. Access, Efficiency, and Opportunity. Information Policy Institute (2003).

Origin of and Variations in Credit Reporting

Private credit bureaus first emerged in both United States and Sweden at the close of the 19th century.[26] Countries such as Austria, Finland, Canada, and Germany soon followed. Latin America, Brazil, Chile, Peru and Uruguay all established retail payment bureaus during roughly the same period.[27] These early bureaus were typically cooperatives and non-profit ventures set up by local retailers to help determine the creditworthiness of consumers and were also used to assist with debt collection. Notably, retail payment bureaus in Latin America did not contain bank loan information until recently in Brazil.[28] As populations grew more mobile, it became increasingly important for credit bureaus to expand their geographic reach. In the US, by 1906 a trade association was established to facilitate the sharing of consumer data across regions.[29]

Public credit registries (PCRs) were slower to emerge. The Bundesbank established a registry in Germany in 1934, and France established a credit registry by 1946 under the auspices of the Banque de France. Public credit registries are typically operated by a country's central bank, and provision of data is generally a legal obligation.

The primary source of data for PCRs has historically been commercial loans, although in countries where the consumer lending sector is well developed, some consumer payment data may be collected as well. Public credit registries often emerge in the wake of financial crises; Latin America's earliest emerged during the 1960s and especially in the 1970s during the economic and debt crises of the period. More than half of Latin America's public registries emerged during the 1990s or later, in part due to economic instability throughout the region prior to this.[30]

Whereas in the United States and Asia credit reporting is handled exclusively by the private sector, in Latin America and Europe, a variety of arrangements exist. Private credit bureaus operate along side public credit registries in most Latin American and many European countries. The form, role, and design of credit registries, whether public or private, reflect the political, economic, regulatory, and technological environment where they

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26 See Marco Pagano and Tullio Jappelli. "Information Sharing, Lending and Defaults: Cross-Country Evidence." Both the United States and Sweden established their first private credit bureaus in 1890. It is possible that informal information sharing mechanisms among lenders and retailers existed prior to this.

27 *The 2005 Report on Economic and Social Progress in Latin America*. Chapter 13. "Information Sharing in Financial Markets." Inter-American Development Bank (Washington DC: IADB, 2005) http://www.iadb.org/res/ipes/2005/index.cfm

28 Robert Hunt "The Development and Regulation of Consumer Credit Reporting in America." Federal Reserve Bank of Philadelphia. (2002) http://www.phil.frb.org/files/wps/2002/wp02-21.pdf

29 The organization, the Associated Credit Bureaus, Inc., is the antecessor of the Consumer Data Industry Association (CDIA).

30 *The 2005 Report on Economic and Social Progress in Latin America*. Chapter 13.

emerge. Credit bureau data has little relevance to a market where medium- and long-term loans are small and lending is largely short-term, in such cases information on cash flow and liquidity is far more important than performance on prior loans.[31]

As previously mentioned, it has been established that positive information matters, and that private bureaus make a difference. There is every reason to suspect the differences listed in the table above also make a difference for the lending sector. Simply, they measure the amount of information available to a country's financial sector along other dimensions. How much of a difference changes in coverage makes, and by extension participation (see below) makes, especially in the reporting of positives, remains to be tested.

Using Credit Reports: Credit Scoring and Decision Science

Utilizing data in credit bureaus, statistical models have been developed to predict a number of particular outcomes. This is the case since the results of these models can be used for a number of purposes. In the US and elsewhere, models are used for initial mortgage screening, decisions on automobile loans, personal loans, credit cards, and small business loans. Beyond just accept/reject decisions, models are also used to determine appropriate amounts to lend and to compensate for the estimated risk, or to price the loans. Beyond lending, models can also be developed to detect fraud. Using a consumer's buying patterns as a guide, models can flag suspicious activities or activities that fall out of the consumer's usual pattern. The consumer can then be alerted to confirm whether the activity is truly fraudulent. Modeling can also be used by lenders internally to estimate potential losses and the general risk of their portfolios, which is critical in determining reserve amounts and financial projections. Credit scores can also be used to assess whether a deposit is needed or how much of a deposit is needed for several services, such as wireless telephones, internet, and utilities. Additionally, Credit scores can be a good measure for landlords to assess the risk of potential renters. Noting these expanded uses of scoring models based on credit reports former Chairman of the US Federal Reserve said:

> "*Credit-scoring technologies have served as the foundation for the development of our national markets for consumer and mortgage credit, allowing lenders to build highly diversified loan portfolios that substantially mitigate credit risk. Their use also has expanded well beyond the original purpose of assessing credit risk. Today they are used to assess the risk-adjusted profitability of account relationships, for establishing the initial and ongoing credit limits available to borrowers, and for assisting in a range of activities in loan servicing, including fraud detection, delinquency intervention, and loss mitigation. These diverse applications have played a major role in promoting the efficiency and expanding the scope of our credit-delivery systems and allowing lenders to broaden the populations they are willing and able to serve profitably.*"

[31] Margaret Miller. "Credit Reporting Systems around the Globe."

For consumer lending decisions, models are usually optimized for predicting outcomes such as being 60+ or 90+ days past due any account in the next 12 or 24 months, declaring bankruptcy in the next 12 months, being 60+ days past due on a mortgage, having a delinquency on an automobile loan, or a delinquency on a wireless phone account.[32]

Fundamentally, however, these models require data of sufficient quality and quantity to make useful predictions. The more data the model can use, that is, the more of a complete picture of a consumer's past behavior which can be assessed, obviously, the better the predictions will be. Japan's current market for consumer credit data has many shortcomings. Unlike the US market where there are three main credit bureaus (that compete directly with each other) in which consumer payment data from all sectors flow, Japan's credit bureaus are relatively segmented, with some having some types of payment data and others having other types of data. The data which is exchanged between the different bureaus is often negative only or incomplete, and unlike the US market's FICO, there is also no standard scoring model. Thus, a model using data from any of these bureaus will usually have an incomplete picture of a person's payment history and its score may not be that well understood among a broad group. This lack of information on a person's credit history can translate, for instance, to banks being unable to distinguish the risk-level of borrowers for housing loans, and thus not charging different rates to relatively riskier borrowers. This essentially means that the low-risk borrowers are subsidizing the higher-risk borrowers. In its *Asia Focus* publication, the Federal Reserve Bank of San Francisco cites the lack of good consumer credit coverage by Japan's bureaus and a lack of standard models as inhibiting lender's ability to price risk .[33] Without an efficient way to price risk, Japanese lenders will continue to lend to high-risk consumers who otherwise would not have been extended credit and at relatively low interest rates. Many low-risk borrowers, who otherwise should be extended credit, will not be extended credit. And those low-risk borrowers that are extended credit will have higher interest rates than they otherwise would, in order to subsidize the indistinguishable high-risk borrowers.

32 See Elizabeth Mays, 2004. *Credit Scoring for Risk Managers* for a good listing of various models, their uses, and what they predict.

33 *Asia Focus, Country Analysis Unit, Federal Reserve Bank of San Francisco*. September 2005

In an October 2002 speech about credit scoring technologies to the American Banker's Association, Alan Greenspan (then Chairman of the US Federal Reserve) noted "These technologies have sharply reduced the cost of credit evaluation and improved the consistency, speed, and accuracy of credit decisions."[34] In 2003, Greenspan noted that credit reporting systems had "a dramatic impact on consumers and households and their access to credit in this country at reasonable rates."[35] In the US and elsewhere, the value of using credit scoring via rich data from credit bureaus has been embraced by those who work in bank branches to the highest levels of the financial system.

Although it is the case that the US does not have the sort of black market for consumer lending as exists in Japan, it does, nonetheless, have what most would call forms of predatory 'high-interest' lending. These financial services are thought to be used by those with little credit history, such as the young and immigrants. Bringing in more 'non-traditional' data to their credit files, and in many cases actually creating credit files, is being looked at as a way of bringing these people in to the financial mainstream and allowing them to access credit at lower interest rates. In theoretical and quantitative studies, PERC has seen much promise in this.[36] The same general idea of moving consumers from high-interest 'predatory' lenders to the more competitive financial mainstream should also hold in Japan with the increased availability of comprehensive high-quality full-file traditional credit data.

Developing credit bureaus (or a system of credit bureaus) with rich and comprehensive payment data from which statistical models can be developed to assess risk is no easy feat. This is particularly true in an environment with already established credit bureaus, such as Japan. Removal of legislative barriers to the development of an improved consumer payment database system is the first and easiest way to develop such an improved system. One barrier is designating a very narrow permissible use for credit scores. By limiting the use of credit scores, the demand for the scores and the underlying data is limited. This provides little incentive for companies to invest in the infrastructure needed to develop a more comprehensive payment reporting system. And so the uses that the scores are permitted for are not likely to have very good data or models. That is, by legislating a very narrow use for the scores and data, legislators are providing little incentive for the market to create the scores and the databases for those areas.

Removing other barriers to the market evolving the credit reporting system into a more unified, less fractured system or actually providing positive incentives for such a transformation would also speed the development of superior payment databases. However, governmental attempts to influence

34 http://www.federalreserve.gov/boarddocs/speeches/2002/20021007/default.htm

35 http://www.federalreserve.gov/boarddocs/testimony/2003/20030604/default.htm

36 http://www.infopolicy.org/publications.htm

the evolution of free market institutions can be a tricky. As such, it may be wiser to focus on the removal of barriers and let market forces paint in the details.

The development and use of a much-improved payment reporting system, no matter how it proceeds, is likely to take some time. The process will be iterative, with demand for scores leading to demand for improved data and demand for better models based on the superior data. The improved models will then increase the demand for their use, and then more data and so on. To jump-start this process, however, it is important to allow for the broad use of credit scores, since such scores are the ultimate embodiment of the value of the credit reporting system and limiting demand for their use ultimately limits demand for the entire credit reporting system.

In addition to consumer lending, credit scores are also used in small business lending. In the late 1990s, financial institutions in Japan introduced the use of small business credit scoring. By 2003, the FSA was encouraging its use.[37] The FSA reported that as of 2004, 45 percent of regional financial institutions were using small business credit scoring to some extent. From an FSA survey of banks, key reasons given for the interest in small business credit scoring are:[38]

- ▷ Prompt screening and implementation of loans (93.9 percent)
- ▷ Upgrade efficiency (cost reduction) of existing loans (75.8 percent)
- ▷ Marketing tool to gain new borrowers (48.5 percent)
- ▷ Adjustment of lending conditions (such as lending interest rates) to appropriate levels (39.4 percent)

Although the survey was for small business credit scoring, the reasons given for interest could also easily apply to consumer credit scoring.

As mentioned earlier, the personal credit history of the small business owner or entrepreneur can be used to increase the accuracy of small business credit scores. With financial institutions expressing clear interest in scoring for small business due to the perceived/realized benefits from scoring, there would seem to be real value in improving small business credit scores via improvement in the quantity and quality of consumer credit data. As it stands now though, many Japanese banks do not use credit scoring for sole proprietorships and many of the small business credit scores do not utilize business owner information. This, as Aritia Ono points out, is "due in part to the shortage of data on personal credit history." In other words, the same reason the consumer credit market's use of scoring for consumer loans is stymied.

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37 Arito Ono, "The Role of Credit Scoring in Small Business Lending." Asian Development Bank Institute, May 15th, 2006. Pg. 6

38 Ibid. pg. 7

In the US, the use of personal credit history for lending to small businesses, start-ups, and entrepreneurs is seen as a powerful tool for creating new jobs and a dynamic and vibrant economy. If fact, so much so that a broad range of institutions are looking at how adding even more data to personal and business credit files from non-traditional sources can assist small business development. These include the Brookings Institution, the Milken Institute, the Small Business Administration, and the Federal Reserve, among others.[39] The initial challenge for the Japanese payment reporting system is not as difficult in the one respect that it is to make more available *traditional* credit information. The overall task is quite challenging since making such payment data more available requires institutional structures in the marketplace and legislation/regulation to change. Such a task is difficult anywhere, but with growing evidence of the value in such changes from other nations, surely a task well worth the effort.

CONSUMER CREDIT AND CREDIT REPORTING IN JAPAN

Similar to the development of consumer credit markets across the other highly developed nations, the modern Japanese consumer credit market evolved organically, guided by economic forces, shaped by cultural norms, and restrained or prodded by legislators. America, which is thought to have the most advanced consumer credit market in the world, also influenced the development of Japan's credit market. As early as 1901, Singer introduced sewing machines to Japanese consumers with a hire-purchase payment option, similar to the rent-to-own method. In 1928 and 1930, Ford and GM, following the American model, also established financing societies.[40]

Such financing entities, known as *shinpans*, were regulated by the government. However, arguably, it really was not until the early 1950s that the modern Japanese consumer credit market arose, when department stores and other retailers began offering credit and installment payments for various consumer goods, such as furniture and clothing. In 1953, the *sarakin* (finance companies for 'wage-earners') were enabled by legislation replacing an older system of high-interest financing (*kori-kashi*) from the Meiji era.[41] Though, the *sarakin*, by today's standards, were also high interest lenders. As Gelpi and Julien-Labruyere put it, "The idea was to introduce a more moral aspect into the profession by fixing a usury rate of 109.5 percent!" From the 1960s on, the *shinpans* developed rapidly, with relatively low interest rates, usually a few points above the discount rate and never above 30 percent. The share of the consumer credit market carved out by shinpans was around 43 percent, that of the *sarakin* about 7 percent, and that of all mutual banks about 48 percent (Gelpi and Julien-Labruyere 115). In the last ten years, although retail credit remains, as it has, the dominant force in the consumer credit market, there does appear to be a major shift away from secured collateral based credit towards unsecured credit.[42]

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39 For more information see http://www.brookings.org/metro/umi/events/20060309_bizcredit.htm.

40 Gelpi, Rosa-Maria and Francois Julien-Labruyere, "The History of Consumer Credit: Doctrines and Practice." 2000. Pg. 114

41 Ibid., pg. 115

42 For additional historical information on the consumer credit market in Japan see, Yajima, Y., Y. Shinoda, C. Ichikawa and Y. Honjo, "The Origin and Development of Consumer Credit in Japan", Consumer Credit Industry Association, Consumer Credit Research Institute, 1992 and Arthur J. Alexander, Kong Dan Oh "The development and structure of consumer credit in Japan" Rand Note. 1989

Table 1 shows the size of the Japanese consumer credit market relative to other advanced nations in the mid to late 1990s. These figures, which exclude mortgages, show that either as a share of GDP or private consumption, the consumer credit market in Japan is small relative to the other large advanced economies. Though only around two-thirds its size, Japan's consumer credit market is closest is relative size to the French consumer credit market, which has a credit system that only contains negative (derogatory) payment information.

Table 1: Consumer Credit as a Share of GDP and Private Consumption (1993-97)

Country	% of GDP	% of Private Con.
Japan	3.6%	6.1%
USA	14.4%	21.3%
Germany	11.0%	19.2%
France	5.6%	9.3%
UK	9.6%	15.1%

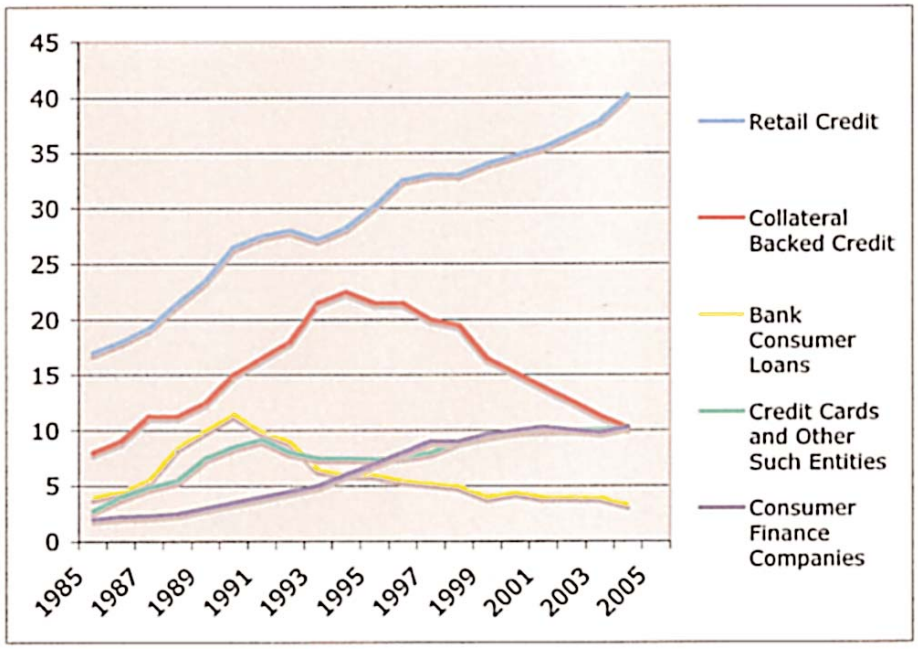
Source: Guardia, Nuria Diez "Consumer Credit in the European Union". ECRI Research Report, February 2002.

Consumer Credit Markets

The consumer credit market includes all loans to consumers excluding real estate loans. Consumer credit can be divided in to two broad categories: secured loans, credit which is backed by collateral such as bank deposits; and unsecured loans, loans for which the creditworthiness of the borrower must be assessed.

Consumer credit can also be divided according to the source of the credit. For instance, credit can be extended by retailers, consumer finance companies, banks, or credit card and other entities affiliated with banks and/or distributors.

Figure 1: Credit Extended by Source/Type
(Trillions of Yen)



Source: FCBJ (www.fcbj.jp) and JCCIA (www.jccia.or.jp)

As seen in Figure 1, the overall trend since the mid 1980s is one in which consumer credit is being extended more and more by retailers, consumer finance companies, and, though the trend is less discernable, by credit card and other entities affiliated with banks and/or distributors. This contrasts with the somewhat steady decline since the early 1990s in consumer loans extended by banks and by credit extended which is backed by collateral. That unsecured consumer credit is becoming more prominent and guaranteed credit less prominent are certainly developments that have co-evolved with the development and use of credit reporting in Japan.

The Japanese Banker's Association reports that its Personal Credit Information Center (KSC), has seen the number of inquires rise by over a third between 1995 and 2004. The Federation of Credit Bureaus of Japan report a more than doubling of inquires between 1992 and 2002. The Credit Reporting Information Network or "CRIN," which exchanges negative only data between the three main credit bureau bodies, has also witnessed a more than doubling in the number of inquires in this period. Growth can clearly be seen in the use of credit information to assess credit worthiness, which is important when extending unsecured loans.

Consumer Finance Companies

The push to lower the ceiling on interest rates charged to consumers continues to the present. In 2000, regulation was revised lowering the upper limit on rates to 29.2 percent from 40 percent. In 2006, as this report is being prepared, an advisory group to the Financial Services Agency (FSA) recommends cutting the ceiling rate to 15, 18 or 20 percent based on the amount of the outstanding loan principal. This action would eliminate a 'grey zone' that exists between two legislative ceilings, one 20 percent and one 29.2 percent. Lending at rates in this 'grey zone' is often seen as predatory.[43] Though, some feel that lowering the official ceiling in such a manner will only serve to expand the role of black market lending.[44]

Another fear, supported by one academic study, is that as with economic ceilings in general such a ceiling on interest rates charged to borrowers would have the effect of reducing the number of borrowers or the total amount borrowed. Such a ceiling could leave an estimated 10 million people without access to loans .[45] The macroeconomic consequences of such a policy could also, it is speculated, hamper Japan's economic recovery. The author of the study, Tomoaki Sakano, estimates that lowering the ceiling to 23 percent would reduce GDP growth by .364 percent.[46] This, of course, assumes that the overall lending environment remains unchanged except for the imposition of a lower statutory interest ceiling. If riskier borrowers who are turned away from regulated lenders simply use the black market then there may not be that large of a macroeconomic effect. There also could be unforeseen competitive dynamics that would not reduce the number of borrowers by as much as Sakano estimates, but instead eat more into the profits of the lenders. Though this scenario would likely be the optimal one envisioned by the proponents of the rate reduction legislation, there appears to be little more than just hope for this outcome.

The profitability of the consumer finance companies is - and has been for years - respectable by nearly any standard.[47] *The Economist* points out that unlike consumer credit markets in other countries where banks and credit-card issuers are large players, Japan's specialized consumer finance companies dominate the consumer credit market. *The Economist* goes on to state, "In recent years, admittedly, the banks and credit-card issuers have made some inroads and the consumer-finance companies' lending has been flat. Even so, the Japanese people owe them around yen12 trillion ($103 billion) all told, ten times the credit-card total."[48] The profitability of

[43] Pilling, David, "Cut in Japan Consumer Rates Backed." Financial Times. April 25th, 2006.

[44] Lewis, Leo, "Japan Fears Criminal Response to Loan Change," The Times. April 24th, 2006.

[45] Guerrera, Francesco and Michiyo Nakamoto, "Japan money-lending plans 'could choke recovery'." The Financial Times. April 19th, 2006

[46] Ibid

[47] Bremner, Brian, "Japan's Dazzling but Dark Consumer-Finance Firms," Business Week March 29, 2004.

[48] The Economist. "Uncertainty bites the moneylenders; Consumer finance in Japan" London: Mar 4, 2006. Vol.378, Issue 8467; pg. 84

the consumer finance companies is in very stark contrast to that of Japan's general banking and finance sector. A 1995 IMF report noted that the average rate charged on bank loans was around 2 percent. Further, that it was such low rates, leading to low levels of revenues, and not costs that accounted for anemic bank profits.

The report speculates that such low rates of interest may be symptomatic, ironically, of the banks having many bad and risky loans on their books. Not wanting to push their borrowers to default by charging higher rates, reflecting, perhaps, the truer risk of the loan, the banks subsidize some of their weak borrowers. Looking at the distribution of rates charged by banks, the report finds it to be very narrow, with over 90 percent of outstanding loans in 2004 having rates between 0 and 3 1/8 percent. Compared with their overseas counterparts, Japanese banks have had - at least until recently - a limited range of products and services and have not as aggressively extended themselves beyond their core businesses into new markets.[49]

The enviable position consumer finance companies find themselves in today, which also makes them large targets, was, as is usually the case, not achieved by accident. Kaori Iwasaki of the Japanese Research Institute believes consumer finance companies grew rapidly in the 1990s and achieved such a dominant position in the consumer credit market due to a savvy understanding of consumer needs and a "high level of credit management know-how." Iwasaki believes that there are three key underpinnings to the success of the products offered by consumer finance companies: (1) the fast speed with which credit is checked and loans are made, (2) the convenience with which loans are made and repaid, including the use of automated contract machines, and (3) the protection of privacy by the consumer finance companies.

Despite the rapid growth and success of consumer finance companies, Iwasaki notes that the potential market for the 'latent' consumer credit market served by the consumer finance companies is about double the market size actually served by consumer finance companies in 2005.[50] That there is a potential, large, and underserved market does not necessarily translate to large potential future profits for the consumer finance companies. The potential borrowers may not be current borrowers simply because they may tend to balk at the credit terms offered by the lenders. Attracting more borrowers may require extending credit on terms more reasonable to borrowers. Depending on the competitive environment of the consumer finance companies, it may be in no company's best interest to do so in the short run. The future profitability of consumer finance companies could also be impacted from outside competition from banks and credit card companies.

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[49] International Monetary Fund, "Japan: Selected Issues" IMF Country Report No. 05/272 August 2005.

[50] Iwasaki, Kaori, "Consumer Finance Companies and their Prospects for the Future," Japan Research Quarterly Spring 2005

One of the darker sides to the debate over consumer lending rates and practices is the perceived link between such social ills as stress and high rates of suicide and being trapped by debt.[51] Perhaps realizing the health consequences of holding (too much) debt at high interest rates, some 30 consumer loan companies take out life insurance on their customers.[52] At the same time the FSA is pushing to lower the ceiling interest rate on consumer loans, they are pushing back on companies engaging in over-aggressive debt collection. In April 2006, the third largest consumer finance company, Aiful, was being forced to stop operations at most of its branches for 25 days for carrying out such over-zealous collection tactics as repeatedly calling a borrower's employer.[53] Aiful did have some well-publicized extreme cases of stepping over the accepted line that may have set the stage for the punitive FSA action. In one case, in 2001 a 28-year-old woman was in the hospital room of her mother who was dying of cancer when an official of Aiful reportedly entered and tore open envelopes of cash left as gifts from family members. The official took 10,000 yen and left a receipt beside the dying woman's bed. A manager at the local Aiful office did later apologize, but such sentiments likely would not dent the public relations damage done by such an incident.[54]

A survey reported by the Japan Research Institute in 2005 reflects some of the negative images the public has of the consumer finance industry. Of those most familiar with consumer finance companies, that is their current or past customers, 70 percent responded that consumer finance companies served a useful role in society. Of all who had and had never used such services, the figure falls to just over 50 percent.[55] This means that less than half of those who have never used such services, the potential new customers of such services, and whose opinion of consumer finance companies is shaped largely by the media, feel that such services are useful to society.

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51 Jordan, Mary and Kevin Sullivan, "Death of 3 Salesmen - Partners in Suicide," Washington Post. October 7, 1998. Also see West, Mark D.,"Dying to Get Out of Debt: Consumer Insolvency Law and Suicide in Japan," John M. Olin Center for Law & Economics, University of Michigan. Paper #03-015, December 2003.

52 Matsubara 2006 also reports that the rate of suicide in Japan is over twice that of the US, with 30,000 suicides committed each year, with an estimated 8,000 of those cases being individuals in 'dire' financial straits.

53 Nakamoto, Michiyo., "How Much is that Doggie on the Window? It Depends on the Pit-bull Lenders," The Australian. April 22nd, 2006.

54 Matsubara, Hiroshi. "Cover Story: Till Debt do them Part," International Herald Tribune/Asahi, May 17, 2006.

55 JRI News Release, "Consumer Survey on the Image of Consumer Finance Companies," The Japan Research Institute June 27, 2005 http://www.jri.co.jp

A prominent advocate of the perceived victims of consumer lending, lawyer Kenji Utsunomiya, believes that 10 percent of the market - or 2 million people - are over-indebted. He believes that greater government intervention is needed to reign in some of the excesses of the private sector.[56] He also believes that stricter lending guidelines would force lenders to be more careful.[57] Again, such hopes about the consequences of stricter guidelines are by no means assured. Greater but smarter lending is something that is difficult to legislate. Certainly the general legislative/regulatory environment in which lenders operate is important. The optimal regulatory environment being one that clarifies the rules of the market, allows for competitive and transparent transactions, and generally sets the stage for market forces to operate. Actually trying to fine tune particular market outcomes is notoriously difficult. Better lending would be expected to result if lenders had superior information on potential borrowers via improved consumer credit databases. So legislative/regulatory changes aimed at improving credit databases either through encouragement or the removal of barriers may improve lending while minimizing unintended consequences compared to more heavy handed government intervention, such as lending caps simplistically based on income.

The Financial Times reports that the consumer finance industry, aware of the many criticisms of its business practices, is arguing for solutions that do not involve government mandates. The industry believes that lowering the interest rate ceiling will simply push many borrowers in to the hands of unregulated black market loan sharks. They argue that instead what is needed is “greater competition, transparency and consumer awareness”(Jordan and Sullivan 1998). At the same time, the industry does acknowledge that there are some problems that need addressing. For this reason - and since it remains one of the only voices advocating alternative market-orientated solutions to government regulation - there appears real value in its input into the debate of whether and how the government should change the regulatory environment of their industry.

It may be the case that simple - some might say heavy-handed - government action of limiting lending and lowering the cap on interest rates will do more good than harm. Even with such an optimistic outcome there still would remain many problems with the consumer lending industry. There would still be a black market made only stronger through increased government regulation. There would likely still be some harm done to the vital consumer sector of Japan’s economy. It is questionable whether regulation would prompt lenders to be better able to determine who should be lent money at a given interest rate and how much. Although getting rid of the ‘grey zone’ may clarify matters somewhat for consumers, it would not necessarily make them any wiser or more responsible with regard to borrowing habits and financial matters.

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56 Financial Times, "Harsh Tactics Spur Calls for Japan Lending Curbs" May 10th, 2006.

57 Nakamura, Akemi and Mayumi Negishi. "Consumer Lenders' Dirty but Open Secret," The Japan Times, May 18, 2006.

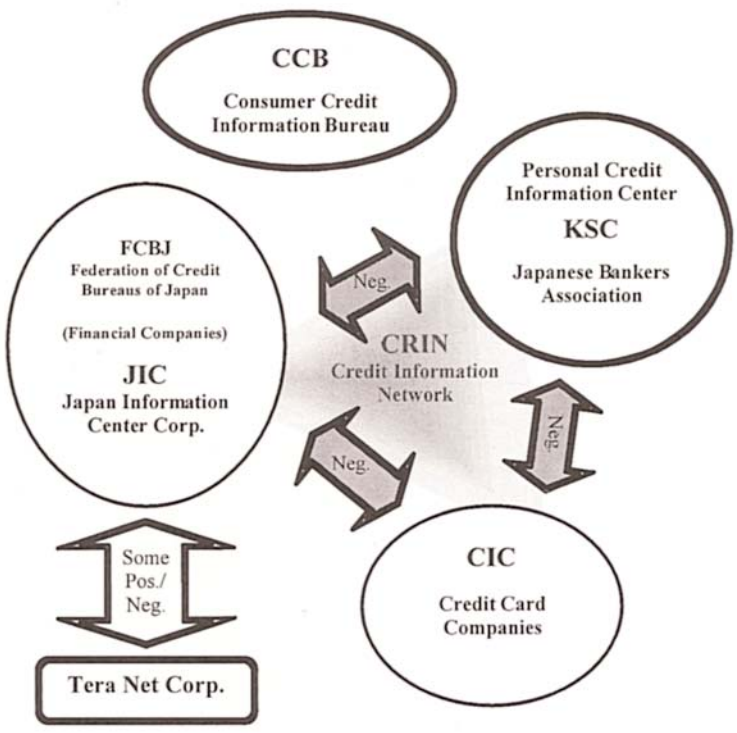
The issue of government acting as a watchdog to protect borrowers from collection methods deemed unacceptable by society is a different matter. There seems to be a clear role for a strong government in this area and in establishing similar consumer protections, such as maintaining efficient, effective, and fair bankruptcy laws. One of the natural outcomes of such government enforced consumer protections is to limit debt collection efforts. So, one would expect that this would lead to less lending and more careful lending, particularly so if the riskiest borrowers are already charged near the maximum interest rate. Of course, the government can go too far or not far enough with its consumer protections and can structure protections in a variety of ways. Ideally, the government should balance the needs of the borrowers, lenders, and society as a whole when enacting such consumer protections.

Of the other, thornier, issues already touched upon, there is one avenue that could lead to many solutions. If it were possible to improve the ability of lenders to gauge the credit-worthiness of borrowers, such as by increasing the type and quantity of information in credit reports, we would expect the following:

- ▷ Aggregate consumer lending would rise resulting in greater lending to those more credit worthy and less to high-risk borrowers.
- ▷ Downward pressure on interest rates would occur as greater competition emerges in the consumer lending market, allowing individual borrowers greater access to loans at rates that more accurately reflect their credit-worthiness. If banks increase their participation in this profitable market, both banks and consumers could benefit.
- ▷ The growth of the black market would diminish relative to that of the legal market.
- ▷ Lenders would be able to set more appropriate rates for small businesses based upon business owner profile credit data, thereby stimulating entrepreneurship and growth.
- ▷ The incidence of consumer over-extension and bankruptcy would be reduced, as lenders are better able to match credit offers with borrowers based upon their actual credit risk profile.

Improving credit bureau databases will also allow for enhanced fraud detection, since it would be easier to spot deviations from a consumer's purchasing patterns. This may be of particular interest in Japan where the rate of credit card fraud (in 2002) was twice that of the US.[58] Better information on the use consumer credit (from more informative credit files), could allow for improved oversight and monitoring of the financial well being of consumers. Futher, in some cases, such as of the FSA proposed lending cap, it could be very useful in effectively implementing measures aimed at remedying some of the current problems with consumer lending. This is the case since without information on how much a consumer has been lent (from banks, credit cards, retail, etc.) it would be difficult to see whether they have actually exceeded their cap.

As in consumer credit markets elsewhere, institutions, organizations, and information exchanges arose to mitigate the ever-present problem of asymmetric information. The following figure illustrates the primary organizations that collect consumer credit information and indicates the relationships among them.



58 Mann, Ronald J., "Credit Cards and Debit Cards in the United States and Japan" Institute for Monetary and Economic Studies, Bank of Japan. Vol.20, No.1 / January 2002

KSC is a personal credit information center founded by the Japanese Bankers Association in 1973.

- ▷ Members include banks, financial institutions, bank-affiliated credit card companies and guarantee companies.
- ▷ Transactions registered include consumer loans, current account transactions, guarantees, and credit card transactions.

Federation of Credit Bureaus of Japan (FCBJ) was founded in 1976. **Japan Information Center (JIC)** was founded in 1986 and acts as the 'public face' of the FCBJ, exchanging information via CRIN. The FCBJ is made up of 33 credit bureaus, the shareholders of which are consumer finance companies.

- ▷ Members include consumer finance companies.
- ▷ Transactions registered include consumer loans.

Credit Information Center (CIC) was founded in 1984.

- ▷ Members include consumer credit companies, department stores, retailers, leasing companies, and guarantee companies.
- ▷ Transactions registered include credit card transactions, installment credit sales, leasing contracts, guarantees, consumer loans, and home loans.

CCB was founded in 1979 as the Central Communications Bureau by companies with foreign capital. As of March 2005, CCB had more than 500 members including credit card companies, financial institutions, credit guarantee companies, and consumer finance companies.

Credit Information Network (CRIN) was established in 1987 under a directive from MITI and the Ministry of Finance to eliminate excessive lending and promote healthier consumer lending. The network facilitates exchanges of information, mostly derogatory, between its three members: KSC, CIC, and the JIC.

Founded in 1999, the **Tera Net** exchange system exchanges information among the 33 credit bureaus of the FCBJ. The information exchanged is both positive and negative and originates from consumer finance companies, department stores, discount stores, and bank card companies.

Tera Net is administered by JIC, and utilizes much of the same core credit data as JIC. Tera Net also includes data from a large minority of CIC members.

The data exchanged between Tera Net and JIC does not include all data. Some members of JIC have refused to share data with Tera Net. Data exchanged is limited to the number of active accounts, inquiries pertaining to new account applications, and so on.

ESTIMATIONS

Multi-country, quantitative studies serve to measure the impact of information sharing in credit markets.[59] These statistical estimations test to what extent credit reporting itself - and in its different forms - expands lending to the private sector. (Information on consumer loans is lacking for most economies. Private sector lending, as measured by a survey of the banking sector,[60] is used as a proxy.)[61] Other studies have examined whether information sharing reduces non-performing loans as a share of total loans, using a survey of banks.[62] We use private sector lending as a share of GDP in order to increase the sample size.

The controls used in our estimates are standard. Previous estimations have taken into account legal traditions,[63] wealth, economic growth, the age of the credit registry, the rights of creditors, and more recently, whether the bureau is public or private. Of the various controls, perhaps the most crucial is the ability of creditors to collect on defaulted loans. Intuitively this factor is crucial in determining whether and how much a bank is willing to lend to a borrower.

The estimations here focus on three aspects of the reporting system and how they affect private sector lending: the ownership of the bureau, the scale of participation, and whether the information is negative only or both positive and negative. Our estimates use recent data from the World Bank Doing Business database. The database contains information on *both* public credit bureau coverage and private credit bureau coverage. The database also provides an index on creditor rights and credit information. (See below.)

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59 See Marco Pagano and Tullio Japelli. "Information Sharing in Credit Markets." Also see Simeon Djankov, Caralee McLiesh, Andrei Shleifer, "Private Credit in 129 Countries." NBER Working Paper No. 11078 (January 2005). http://papers.nber.org/papers/w11078. Http://papers.nber.org/papers/w11078.

60 IMF, International Financial Statistics. "Claims on the private sector". Line 52D for 2004.

61 Although some studies based on economies for which consumer loan information is available, have looked at the impact of information sharing on consumer lending as a share of GDP. Marco Pagano and Tullio Japelli. "Information Sharing in Credit Markets."

62 Inter-American Development Bank, *IPES 2005: Unlocking Credit: The Quest for Deep and Stable Bank Lending*. (Washington, DC: IADB, 2005) Chapter 13, p. 178. www.iadb.org/res/index.cfm?fuseaction=Publications.View&pub_id=B-2005E.

63 Marco Pagano and Tullio Japelli. "Information Sharing in Credit Markets."

For participation, we use coverage as a proxy. To the extent that more consumers are captured in registries as more furnishers provide payment information, the proxy is effective. Greater participation by the banks in the reporting system results in more coverage because with more participants larger shares of the market are brought into the reporting fold.

The Doing Business database also provides an index of the legal rights of creditors (on a scale of 1 to 10) based on 10 different variables comprising collateral and bankruptcy law. It measures the extent to which law governing bankruptcy and collateral enable or hinder lending as the ability to recover losses in the event of non-payment affect incentives to extend loans. The Doing Business Legal Rights index comprises three factors concerning rights in bankruptcy and seven factors concerning collateral law. The score is a simple aggregate of the single point assigned for each factor if it obtains, zero if it does not. These factors are:

1. Creditors can seize their collateral when a debtor enters reorganization
2. Creditors are paid first from liquidated assets
3. An administrator, rather than management, is responsible for and has effective authority during reorganization
4. Collateral agreements allow a general description of assets
5. Collateral agreements allow a general description of debt
6. Security in the property can be taken or granted by any legal or natural person, that is there is no constraint on the form of the legal person
7. There is a unified registry that includes charges over movable property
8. Secured creditors have priority outside of bankruptcy
9. Enforcement procedures can be specified in contracts
10. Out of court seizure and sale of collateral by creditors is permitted.[64]

Six variables covering the breadth and depth of financial data in credit registries are also used to form an index of credit information. As with the legal rights index, one point is given for each factor obtained. These factors are:

1. Full-file information (both positives and negatives) are distributed
2. Financial and non-financial credit information (such as retailers) is available
3. More than two years of information is distributed
4. Reports contain information on loans above 1 percent of income per capita

64 From the Doing Business database. http://www.doingbusiness.org/Methodology/GettingCredit.aspx. The index was derived from the methodology developed by Simeon Djankov, Caralee McLiesh, Andrei Shleifer, "Private Credit in 129 Countries." NBER Working Paper No. 11078 (January 2005). http://papers.nber.org/papers/w11078. Our approach is derived from theirs, and our results are broadly consistent with their findings. (See below.)

5. Borrowers can access their data
6. Information on both firms and individuals is available.

Crucial in this set is the availability of full-file information across sectors, e.g., finance and retail. Sectoral segmentation of full-file payment information obtains across the various reporting systems in Japan. As such, it is an important factor to be considered in the analyses conducted here, and also forms one of the core elements of the simulations (see below).

These aggregated legal and credit information attributes capture many of the factors that previous estimations have examined. The most extensive tests on the impact of the availability of credit information on private sector lending as a share of GDP were conducted by Djankov, McLiesh and Shleifer. Unlike the tests below, they used dummy variables for the presence of a private bureau and for the presence of a public bureau. Their creditor rights index had fewer factors, but they also included in their test an inflation variable. They found that the presence of private bureau had a significant and substantial impact on private sector lending, with a resulting difference of 20 to 35 percent over the period 1978-2003.[65] They further tested the impact of legal origin, whether the legal code was derived from Anglo, Germanic, Scandinavian, French, or Socialist law, and also for contract enforcement days.[66] Some of our estimations also looked at legal origin and it did find a small but measurable impact, but these were lost when considered along with creditor rights.[67] What previous studies did not examine was the impact of coverage.

Simple regressions suggest that coverage, and by implication participation, does matter, but in keeping with the IADB study, it does so to the extent that furnishers provide information to a *private* registry, as Table 2 shows.

65 Simeon Djankov, Caralee McLiesh, Andrei Shleifer, "Private Credit in 129 Countries." Table B.

66 They found that French origin had positive and statistically significant impact in poor countries and a negative but insignificant impact in rich countries. German origin had positive and statistically significant impact in rich countries, as did socialist origins in all countries. Also predictably, the longer the contract enforcement days, the lower private sector lending.

67 It is also likely that the creditor rights variable captures the effect of "legal origin", the national-cultural sources of a country's legal code.

Table 2: Public and Private Bureau Coverage and Private Sector Lending as a Share of GDP

VARIABLE	I	II
Constant	140.4222 *** (35.0535)	-137.3321*** (34.4511)
Log of GDP per capita (PPP)	17.5727*** (4.4157)	16.9001*** (4.2353)
Legal rights of creditors (from 0 to 10)	5.6546*** (2.0737)	5.9317*** (2.0061)
Private bureau coverage (0 to 100, as percentage of adults)	0.5540*** (0.1691)	0.5715*** (0.1654)
Public bureau coverage (0 to 100, as percentage of adults)	-0.2191 (0.3801)	
R squared	0.6623	0.6604
F-stat (p value)	29.42 (<.0001)	39.54 (<.0001)
Residual standard error	30.57	30.4
N	65	65

Errors in parentheses; * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Credit bureau ownership structure can make a difference for a few reasons. Public registries were established to assist banking supervisors assess the stability of the financial sector. Providing information for lending was a secondary use, albeit one that is quite significant. Private registries were established precisely to assist lenders in overcoming limited information on borrowers, especially individual borrowers, provide incentives to pay on time, and more accurately assess risk generally. Toward this end, private firms are more likely to provide information products that facilitate lending.

The inclusion of the aggregated "credit information" variable added little to the estimation (also see Table 3 below). One chief reason may be that the factors that make up "credit information" are attributes that can be found in the practices of private bureaus. (Private bureau coverage and credit information are substantially correlated, 0.568.) The direction of effect is probably complicated. The ability to gather wider types of credit information allows a private bureau to deliver superior services to lenders. Furthermore, private bureaus encourage the collection of more information and better information practices, such as longer storage periods, and comprise wider aspects of the payment universe, such as retail.

Table 3 does not take into account one factor that has been firmly established as crucial for lending performance, namely whether the reporting is negative only or whether it full-file. To do so we take into account whether reporting is full-file or whether reporting is negative only. For this second set of regressions, we use variables that posit coverage by a combination of private and full-file and negative only registries. That is, we simply measure the extent of coverage of the credit eligible population by

1. Public negative only files
2. Public comprehensive files
3. Private negative only files
4. Private comprehensive files affects private sector lending.

The intuition behind testing this constellation of variables is that the content of credit reports also must matter for lending. Table 3 shows the results of these regressions.[68]

Table 3: Coverage, Ownership Structure and Comprehensive Reporting (impact on private sector lending as a share of GDP, 2004)

VARIABLE	I	II	III[69]	IV
Constant	-142.40*** (35.31)	-139.48*** (35.49)	-133.97*** (35.41)	-130.80*** (32.20)
Log of GDP per capita (adjusted for PPP)	20.31*** (4.65)	18.37*** (4.45)	17.38*** (4.41)	16.85*** (3.87)
Avg. Change in GDP (1995-2004)	-1.20* (0.70)	-0.82 (0.64)		
Legal Rights of Creditors (from 0 to 10)	4.55** (2.07)	4.99** (2.06)	4.68** (2.06)	4.80** (1.97)
Credit Information (from 0 to 6)	-3.87 (2.88)			
Private Full-file Coverage (0 to 100, as percentage of adults)	0.72*** (0.20)	0.60** (0.18)	0.66*** (0.17)	0.67*** (0.16)
Private Negative-only Coverage (0 to 100, as percentage of adults)	-0.02 (0.86)	-0.13 (0.46)	-0.06 (0.46)	
Public Full-file Coverage (0 to 100, as percentage of adults)	-0.11 (0.41)	-0.26 (0.40)	-0.17 (0.39)	
Public Negative-only Coverage (0 to 100, as percentage of adults)	0.16 (0.46)	-0.01 (0.86)	-0.09 (0.86)	
R squared	0.7075	0.698	0.6895	0.6883
F-stat (p value)	16.93 (<.0001)	18.82 (<.0001)	21.46 (<.0001)	44.9 (<.0001)
Residual Standard Error	29.45	29.65	29.81	29.12
N	65	65	65	65

Errors in parentheses; * p < 0.1; ** p < 0.05; *** p < 0.01

[68] In the estimations, two outliers that had experienced recent financial crises, Argentina and Uruguay were excluded.

[69] There is confusion about how to code Colombia's public credit bureau, which the World Banks's *Doing Business* database assumes to have 0 percent coverage. Regressions assuming a public bureau coverage rate identical to that of the private bureau were also conducted. There was no real change to the results above.

Wealth and extensive rights for creditors account for a large degree of the variance in lending to the private sector. An extensive basket of creditor rights can contribute significantly to private sector lending, for obvious reasons; lenders are more willing to lend if the chances of recouping the principal is greater in the event of a default. (The expected difference between an economy in which there are none of the rights identified by the World Bank and one in which all of the 10 rights are present is nearly 45 percentage points.)

Quite telling also is the result that 100 percent coverage of credit eligible adults by a full-file (or comprehensive) private bureau can be expected to increase private sector lending by more than 60 percentage points of GDP (all else being equal). This figure is substantially larger than that found by Djankov, McLeish, and Shliefer. One likely reason is that they estimated the impact of credit information sharing over a 25-year period, and private sector credit has grown greatly since. In our estimates, removing observations with very high levels of private sector lending, notably the United States and the United Kingdom, resulted in a coefficient of 0.475, which was still significant at the $p < 0.01$ level. (Coefficients on the other variables remained roughly the same.)

Once private bureaus are separated into those that have comprehensive (full-file) reporting and that only report negatives, it becomes clear that practices also matter. More importantly, these findings are in line with the intuition that more credit information on a larger share of individuals in a society results in more credit being offered them. The more that credit providers and other data furnishers provide information, the more lending we witness in the private sector.

Three factors with respect to credit reporting seem key for the well-being and growth of the financial sector-(i) private ownership, (ii) comprehensive or full-file reporting, and (iii) widespread participation (as implied by coverage). This last factor is at once obvious; if few participate, and thereby if few consumers are covered, the reporting system will have little effect on the expansion of credit. Moreover, it points to the fact that legal and regulatory permission to report and keep comprehensive information and the participation of potential data furnishers jointly expand lending.

Two issues remain. First, greater lending is a good thing to the extent that is it a result of ending credit rationing and not merely extending loans to a level beyond borrowers' abilities to afford them. That is, greater information sharing shouldn't lead to over-indebtedness.[70] Second, here, as in the estimation results shown in Table 1, the consequences of sector segmentation have not been measured, partly because we rely on an

70 Banking regulators in the United Kingdom and Hong Kong have recently suggested that increased information sharing can prevent over-extension and consumer bankruptcy. See Hong Kong Monetary Authority, "Circular on Bankruptcy and Consumer Credit Lending," Ref B9/32C and B9/69C and House of Commons, Treasury Committee, 2004-2005, John McFall MP Chair, Second Report, Chapter 3, section 55. http://www.publications.parliament.uk/pa/cm200405/cmselect/cmtreasy/274/27406.htm

aggregate variable. We use simulations to test the impact of reporting on loan performance and market size. Further, we do so while taking into account sectoral segmentation and participation differences as found in the varying Japanese reporting systems. At the core of these simulations is the question of how more information enables lenders to more reliably distinguish between good risks and bad ones.

SIMULATIONS: METHODLOGY

We adopted an approach developed in recent years by Michael Staten and John Barron. Their study found that the use of comprehensive credit information-positive and negative credit history-enables lenders to increase lending while better managing their risk. They also established a methodology to test the economic value of different credit reporting systems.[71] This approach has also been used by others.[72]

Barron and Staten constructed research-grade generic scoring models based on a random sample of anonymized credit reports. They then redacted data elements from the "full-file" US credit reports to simulate credit data available in the more restrictive Australian "negative-only" credit reporting regime and the sector-specific reporting systems found in much of Latin America.

To simulate the effect of the Australian restrictions two sets of files were used: a random sample containing all the data, and the same sample with the "positive" data redacted (or removed) from the files. Both sets of files are then run through their respective models (negative-only files run through the negative-only model and the files containing both positive and negative data are run through the full-file model.) The predictions obtained are then compared against the actual behavior of consumers over a two-year period. (The models predict the probability of a 90 days or more delinquency over a 24-month period of time.) This method allowed a test of different reporting systems using actual micro-level data with observed performance over time to test predictions.

The advantage of the approach is precisely that it allows many things to be held constant-idiosyncrasies in the law, the impact of demographic distributions, fiscal and monetary policy, the business cycle, etc., factors that can shape access to credit and the performance of the loans. The downside of this 'partial equilibrium' approach is that it does not account for switches in credit decision making, including a greater rationing of credit, the use of greater application data, and other responses to the loss

71 Barron, John M. and Michael Staten. "The Value of Comprehensive Credit Reports: Lessons from the US Experience," in Margaret M. Miller ed., Credit Reporting Systems and the International Economy. Cambridge, MA and London, England. The MIT Press. 2003. Pgs. 273-310.

72 Giovanni Majnoni, Margaret Miller, Nataliya Mylenko and Andrew Powell, "Improving Credit Information, Bank Regulation and Supervision." World Bank Policy Research Working Paper Series, No. 3443 http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2004/12/17/000160016_20041217171024/Rendered/PDF/WPS3443.pdf

of information. What the simulations allow is a measure of the impact of more robust information on the efficiency and breadth of the financial system.

Simulating Japan with Canadian Files

For our simulations we used the TransUnion Canada's database of Canadian consumer credit reports. The database contains more than one million files on Canadian consumers. The choice of Canada was intentional. The sole previous modeling of one economy with full-file reporting to simulate another was that of Barron and Staten, who used US credit reports to simulate the Australian economy. (Simulations of the same country under a different reporting system have been conducted for the United States,[73] Brazil, Argentina, and Mexico[74]).

In simulating the reporting systems that are limited in the share of positive information contained in the bureaus the choice of the full-file system used as the base from which the files are drawn is important. Institutional factors, however, also must be taken into account.

A cluster analysis,[75] which tries to order economies in terms of their "closeness", here along four dimensions-per capita GDP (at PPP), rule of law[76], property rights[77], and legal origin[78] -shows the distance between Japan and Canada along these dimensions. (In cluster "3", Figure 2.) (This cluster consists largely of the developed economies of Europe, the developed Asian "city-states" of Hong Kong and Singapore, Canada, Australia, and Japan.)

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73 Michael Turner, et al., *The Fair Credit Reporting Act*.

74 Giovanni Majnoni, Margaret Miller, Nataliya Mylenko and Andrew Powell, "Improving Credit Information, Bank Regulation and Supervision." World Bank Policy Research Working Paper Series, No. 3443 http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2004/12/17/000160016_20041217171024/Rendered/PDF/WPS3443.pdf

75 We used an agglomerative, hierarchical clustering technique. It used correlations as similarity indicators and using Euclidean distances arranged observations according to those "closest".

76 A measure on a scale of 0 to 6 of the law and order tradition in the country based on information from the country-risk rating agency International Country Risk Guide. The measure averages the monthly index of April and October between the years 1982 and 1995. Higher scores indicate a stronger tradition of law and order. Measurements are based on Political Risk Services, International Country Risk Guide (East Syracuse, NY: Political Risk Services, 1996). Aggregated in Rafael La Porta, Florencio Lopez-de-Silanes, and Andrei Shleifer. "Government ownership of banks." Journal of Finance 57, 265-301. (2002) Dataset available at mba.tuck.dartmouth.edu/pages/faculty/rafael.laporta/publications.html

77 An index of property rights, measured on a scale from 1 to 5, with higher score indicating more protection of private property. "The score is based broadly on the degree of legal protection of private property, the extent to which the government protects and enforces laws that protect private property, the probability that the government will expropriate private property, and the country's legal protection to private property." Data from Freedom House. Freedom in the World: The Annual Survey of Political Rights and Civil Liberties 1995-1996 (New Brunswick, NJ: Freedom House, 1996). Aggregated in Rafael La Porta, Florencio Lopez-de-Silanes, and Andrei Shleifer.. "Government ownership of banks." Dataset available at mba.tuck.dartmouth.edu/pages/faculty/rafael.laporta/publications.htm

The rationale for the choice of these dimensions is that they concern broad institutional features of the economy and the context of economic activity. *Legal origins* specify a tradition of rights of creditors, as well as of banking regulations. Both *property rights* and *rule of law* measure the security in property, which for this exercise also means the ability to collect on loans. This ability shaped lending in so much as it determines incentives to lend. (*GDP per capita* at purchasing power parity, of course, measures wealth.)

Of the countries in "proximity" to Japan, Canada possesses the most robust of the accessible files. Economies such as in Australia and France report only negatives and therefore do not possess usable files. Hong Kong's reporting system has been full-file for too short a period of time for the exercise. Singapore maintains payment information on files for too brief a period. Strict laws in continental Europe, as well as problems of limited data, in Belgium, Italy and the Netherlands made their use impractical. The UK was also an attractive alternative. Difficulties in accessing British files, however, left the Canadian option, which is clustered fairly close to Japan and has robust enough files to conduct simulations.

It should also be noted that the performance of Japanese loan portfolios and the Canadian consumer obligations we examined were similar. Unlike the US, Japanese loans are well-performing. Canadian loans are also well-performing. Problem loans accounted for 3.99 percent of gross loans for 966 Japanese banks and financial institutions reported in the *Bankscope* database.[79] Canadian problem loans accounted 0.8 percent of gross loans for the 100 banks in the database.[80] While not identical, these performance levels are similar enough, in that Canadian loans, including Canadian consumer loans, have low default and delinquency rates, making the use of Canadian data reasonable.

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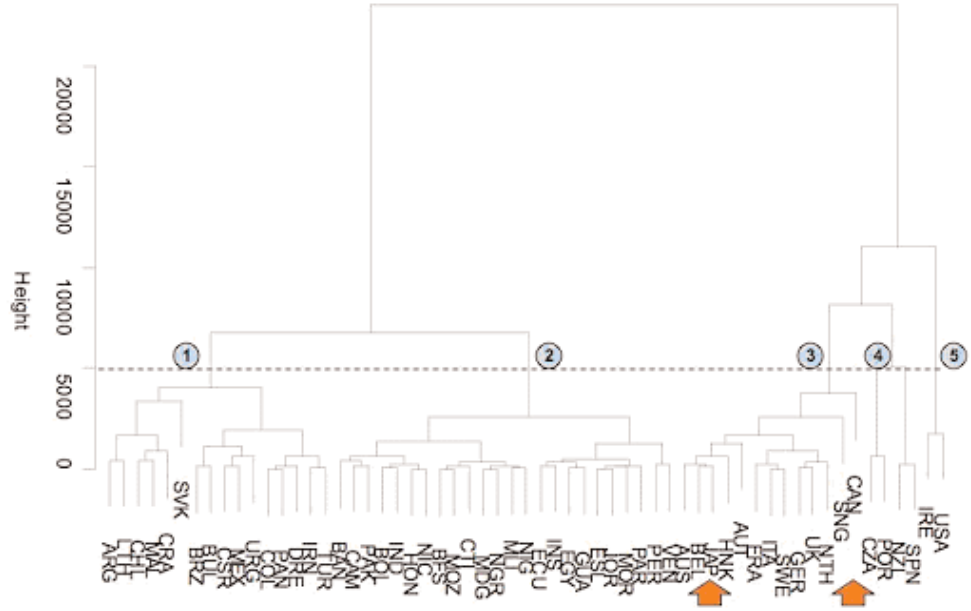
78 Refers to "the legal origin of the Company Law or Commercial Code of each country. There are five possible origins: (1) English Common Law; (2) French Commercial Code; (3) German Commercial Code; (4) Scandinavian Commercial Code; and (5) Socialist/Communist laws." Source: "Foreign Laws: Current Sources of Basic Legislation in Jurisdictions of the World," 1989; and CIA World Factbook 1996." La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer and Robert W. Vishny, "The quality of government, "Journal of Law, Economics and Organization 15, 222-279. (1999) Dataset available at mba.tuck.dartmouth.edu/pages/faculty/rafael.laporta/publications.htm

79 Fitch, Bankscope. Figures for 2004.

80 In the file we examined, 6.3 percent of the consumer files we examined were 90 or more days beyond term. The figures are different partly due to differences in the definition of problem loans and partly because this figure is restricted to consumer retail borrowing, excluding mortgages.

Figure 2: Wealth and Economic & Legal Institutions:
Cluster Classifications



By way of identifying information, Canadian credit files contain name, birthday, address, employment, and social insurance number. The files do contain extensive payment and account information, inquiries, and public record information. Decisions and decision models rely on payment and credit history. For our exercise, unique identifiers were removed to protect the privacy of the data subject. The payment information in Canadian files consists of financial obligation such as retail credit, revolving credit, auto loans and other bank loans. They do not contain information about mortgage payments, however.

We used more than 959,000 actual but anonymized files for the simulations. That is, no individual was identified with a file during the scoring exercise or at any point during this research undertaking in order to protect individual privacy. We constructed three sets of hypothetical files, one for each scenario we considered. For each set, with the exception of the negative-only scenario, we randomly selected the trade lines for which all positive information was purged. An alternative method would have been to choose a data furnisher at random and remove all positives from their lines.

We took credit files from two points in time (February 2005 and February 2006) for each of the data sets. Credit files at July 2004 represent the scored files, the moment when a hypothetical decision is made. The full file at February 2005 and the three hypothetical files for February 2005 (a total

of four sets of files constructed from the approximately million files in TransUnions's database) were run through a credit-scoring model. The timeframe between February 2005 and February 2006 represents the performance period during which we measured the predictive accuracy of the model.

Scenarios

The scenarios reflect some aspects of the different reporting systems found in Japan, as well as the consequences of varying participation in reporting. Above, cross-national evidence indicated that private full-file information leads to wider lending and superior loan performance. We were not able to capture the consequences of sectorally segmented reporting, in which a bank can access full-file information from its sector but only negative information from another, such as retail. Moreover, simulations help to control for many aspects of an economy and society that, while having an impact on the credit system, cannot be measured well or at all. Statistical results can be further evaluated by other approaches.

Simulations employ the specific mechanism of the way credit is allocated in a society to generate measurable outcomes that can be compared. They do so while varying the information in files. Our scenarios are generally based on two of the most widespread reporting systems found in Japan. Two of the four scenarios reflect the practices of reporting in the banking sector and the non-bank sector. The third is a hypothetical scenario designed to show the consequences of reduced participation in the system. The fourth is the baseline, which represents a more comprehensive full-file reporting system with with greater participation. In other words, it is simply the base case in which information has not been redacted and in which the other scenarios are compared.

The four scenarios are:

Scenario 1: Full-file, universal, and comprehensive reporting-positive and negative information from all reporting sectors are available, and all furnishers participate in providing payment information.

Scenario 2: Bank simulation-positive and negative information from banks are available; only negative payment information of 90+ days past due from non-banks is available.

Scenario 3: Non-bank simulation-Positive and negative information from non-banks, with the exception of 25 percent of non-bank revolving credit (or financial credit cards). No bank information is available.

Scenario 4: Lower participation-only 50 percent of furnishers (bank and non-bank) provide positive and negative information, while the other 50 percent provide only negative information.

It must be noted, that Scenario 2 and Scenario 3 are representative of two major Japanese consumer credit databases. We determined the parameters of our simulations based upon an examination of a sample of actual Japanese credit files from the major consumer credit repositories, from information publicly available on the Web sites of the major Japanese credit bureaus, and from interviews with executives at the Japanese credit bureaus. In all cases, we erred on the side of caution. That is, our simulations include assumptions about data quality and data quantity that are overly-generous to the Japanese credit bureaus that they are intended to mimic. As such, the results of our simulations are extremely conservative, and we would expect that the real differences are as much as several times greater than those generated in this analysis.

The conservative nature of the simulation results is further evidenced from primary research conducted by one of our partners in this project. Specifically, the database for a major Japanese consumer credit bureau was analyzed within the past year and the results were shocking. This bureau did not archive data for most tradelines for more than 180 days. Incoming tradelines were used to overwrite extant tradelines, so that a minimum payment on a credit card, for example, would overwrite an account that was 120 days past due. There were further issues with file fragments, duplicate files, and other data accuracy and data integrity concerns. Under these circumstances, credit risk analysis using conventional credit scoring models would be very difficult. Lenders that rely upon this data for loan underwriting are doing little more than guessing about a borrower's credit risk, credit capacity, and credit worthiness. Using this data for purposes of our analysis would have been nearly meaningless. This is another reason why we chose to turn to a non-Japanese source for the study's underlying data.

The Scoring Model

We used a generic scoring model currently in the market-"TransRisk"-to analyze the consequences of the different reporting systems as described by the scenarios above.

TransRisk New Account is used to predict the chances that a consumer will be delinquent on either a specific account or any outstanding account in a one-year period. The model’s predictions are measured over a performance period of a year. That is, the model is used to distinguish good credit risks from bad ones. Its predictions, or rather its classifications, can then be compared with actual behavior over year-long performance period.

The complete files and all the hypothetical files were scored for February 2005. The scores represent predictions of a consumer's chances of delinquency, or being 90 or more days past due on at least one account in the period between March 2005 and February 2006, the "observation" period. How well the model can sort actual good risks from bad ones can then be compared across scenarios.

We defined a delinquency solely on financial accounts. Specifically, only delinquencies on bankcard trades, bank revolving credit, finance revolving credit, financial trades, installment loans, and retail credit were considered. Canadian files possess very few mortgage trades, and this remains a limitation of the study. However, given the study's focus on retail credit excluding home mortgage loans, the absence of significant mortgage data in the study's sample does not diminish the relevance of the findings for the Japanese retail credit market.

The exercise examines consumer's access to financial services. As a generic scoring model, TransRisk does not provide a decision to "accept" or "reject". Rather it can be used to rank order consumers/applicants and associate each different expected rates of delinquency. As such, it allows us to estimate acceptance and delinquency trade-offs under our scenarios. In other words, it shows us how the changes in the provision of positive information alter the choice between extending credit (or even non-credit services as mentioned above) and what share of the loans or services extended will be delinquent. Ultimately, it is left to credit granting institution to determine what level of risk or market share to target and pursue.

For these scenarios, TransRisk was *not* re-estimated. That is, it was not re-optimized for the data. As a generic model, it is designed to assist with a broad array of possibilities. Previous exercises that re-estimate the model suggest that results would be similar. The simulations were *not* iterated. Given that the runs were on a very large sample, the deletion of positives on random trade lines was quite likely to have converged on accurate values.

Evaluation

There are three ways of measuring the value of more information respective to less information.

First, we measure the accuracy of the predictions of the different information sets. The model's score for a credit file is effectively a prediction of the chances that an individual will be 90 or more days delinquent on at least one account (here, any open financial account) in the

following 12 month period. By rank ordering scores, we order individuals from those thought least likely to be delinquent in the coming year to those thought most likely to be delinquent in this period.

We can then observe delinquency rates during the performance period (for which we have data of actual behavior). By comparison of the delinquency rates for segments of the rank ordering, we evaluate the utility of more data. This comparison can be done in two ways. Assume that a lender decides to target an acceptance rate of 20 percent. We then take the top 20 percent, as ordered by the model, for each of the scenarios. We then measure and compare the corresponding delinquency rates. In this manner we can evaluate the extent to which greater positive payment information helps a lender to more accurately predict the risk of lending to a particular borrower.

Conversely, we can assume that a lender targets an acceptable delinquency rate. In general, the delinquency rate increases the lower down the rank order one goes, since the ranking is according to model predictions of likelihood of default. For a desired delinquency rate, say 5 percent, we measure and compare the associated number of potential borrowers, which equals an acceptance rate or market size.

By comparing the different acceptance rates under different scenarios of data furnisher participation, we can measure the degree to which more positive payment information about borrowers affects access to credit in the form of an acceptance rate.

The first approach-the default rate for a targeted acceptance rate-measures the relative efficiency of the different scenarios. The second-the acceptance rate for a targeted default rate-measures the breadth of the system, or how widely credit is available.

A third approach looks at Type I and Type II error rates associated with each scenario. A Type I error is a false positive, in this instance, a high risk borrower is judged to be low risk. A Type II is a false negative, in this instance, a low risk borrower is judged to be high risk. In the former, those who do not deserve credit-in the sense that they are risky and the costs of such will be borne by others-are given credit. In the latter, those who deserve credit-in the sense that they are responsible borrowers-are denied credit.

To measure Type I and Type II errors, we examined the top 25 percent and bottom 25 percent of consumers as rank ordered by the models, for each of the four scenarios. The top and bottom quartiles were used because they were proxies for what are to be unambiguous "goods" and "bads" in practice. As we approached the median of the distribution, classifying an outcome as an error becomes harder. For these segments, in each scenario we examined delinquencies and non-delinquencies. This approach helps to measure the relative efficiency and fairness of different reporting regimes. Fairness here refers to granting credit to those who are deserving of it.

A fourth approach measures “model fit” - the ability of a scoring model to differentiate between good and bad risk borrowers-as gauged by the Kolmogrov-Smirnoff (K-S) statistic associated with each scenario. The K-S is a direct measure of the model’s (and thereby the lender’s) ability to tell a good risk from a bad one. Unlike the Chi-square or the Gini, the K-S statistic does not assume any particular distribution. The K-S, in this instance, simply measures the maximal distance between the cumulative distributions of bads (or curve of delinquencies) over the score range and goods (or curve of on time payments) across the score range, with a maximum of 100. For convenience, we have scaled the K-S statistic for the full-file model estimates to 100. The K-S values for the other scenarios measure the relative fit of the model to the data-that is, relative to the full-file model. These provide a measure of the relative "predictive power" of the model for each of the data sets.

The limit of our approach, as mentioned, is that the model has not been re-optimized for the different data sets. Again, previous experience suggests that the non-optimized results are comparable.[81] Moreover, a generic scoring model, unlike a specified commercial one, is designed to be applied across various conditions.

SIMULATIONS: FINDINGS

Consequences for “Predictive Power” or Model Fit

As noted above, the Kolmogorov-Smirnoff, or K-S statistic measures a model’s fit with the data, or its ability to distinguish between two groups (performing loans and 90 or more days delinquent loans, in this case). The K-S makes no assumptions about the distribution of the data. We normalized the K-S on the Base model to 100. The K-S of the three remaining restrictive scenarios were scaled to show their relative value, in other words their relative predictive power, compared to that to that of the base model.

[81] Turner, Michael. "The Fair Credit Reporting Act: Access, Efficiency & Opportunity Part II" September 2003. www.infopolicy.org/publications.htm.

Table 4: SCALED K-S, Predictiveness

Scenario Simulated				
	Base (Scenario 1)	Scenario 2	Scenario 3	Scenario 4
Scaled K-S	100.00	97.93	92.46	95.5

The model fit, that is, the predictive effectiveness of the model, degenerates with the loss of data. Practically, this means that the models are becoming more and more "wrong" in their identification of who is a good risk and who is a bad one. All three scenarios witness a decline in the K-S value relative to that of the base. The most modest decline is 2 percent of the base (Scenario 2) and the most considerable is more than 7 percent of the base (Scenario 3).

While these reductions in K-S may not, at first blush, seem dramatic, the consequences for default rates (for a given acceptance rate) and acceptance rates (for a given default rate) are not trivial. Moreover, these affect a considerable number of consumers. Additional consumers that are wrongly judged to be good risks and those that are wrongly judged to be bad risk would number in the hundreds of thousands if the hypothetical economy had 100 million consumers. These impacts are discussed in detail below.

The Consequences for the Cost and Access to Credit

As lenders find it more difficult to accurately discern good and bad risks, they will either be forced to accept higher delinquency rates or reduce their acceptance targets. That is, they can opt to reject all but the most clearly credit-worthy applicants, which would entail reducing their market size, in order to preserve their margins. Alternately, they can accept higher rates of non-performance, for which they would have to increase reserves and/or prices of credit. Or, as would likely be the actual case, they can do some combination of the two.

Acceptance Rates

Table 5 provides a sense of the magnitudes by which acceptance rates drop for a given default rate across the scenarios, as furnishers provide less and less positive information.

Table 5: Acceptance Rate by Scenario

Target default rate	Scenario 1	Scenario 2	Scenario 3	Scenario 4
0.50%	47.81%	47.57%	31.32%	39.98%
1%	70.90%	68.81%	62.70%	65.91%
2%	86.34%	83.29%	79.34%	82.31%
3%	92.38%	88.99%	83.29%	87.82%

As with the comparison of K-S measures, the differences range from modest to significant. We use the 2 percent default target as an example. The drops in acceptance rate range from 3.1 percentage points in scenario 2 to 7 percentage points in Scenario 3. For our sample of 1.06 million consumers, these shifts in the structure of reporting would deny credit to 32,335 and 74,212 consumers respectively.

If we extend the changes in the acceptance rate to the credit eligible population of Japan, taken here to be the estimated 106,307,400 people 18 years of age or older (for 2006), scenario 2 results in 3.2 million fewer consumers accepted, scenario 3 yields 7.45 million fewer consumers, and the final scenario yields 4.29 million fewer consumers.[82] Even a drastic reduction in the size of the credit eligible population, say by 50 percent, still leaves millions of consumers rejected.

Default Rates

A complementary view of the impact of reduced furnishing is shown in Table 6. It demonstrates what would happen to default rates as data providers report less positive information, for a given acceptance target.

[82] Source: Statistical Bureau, Director-General for Policy and Planning and Statistical Research and Training Institute, Ministry of Internal Affairs and Communications.
http://www.stat.go.jp/english/data/jinsui/tsuki/index.htm

Table 6: Default Rates by Scenario

Target acceptance rate	Scenario 1	Scenario 2	Scenario 3	Scenario 4
40%	0.42%	0.42%	0.60%	0.50%
50%	0.53%	0.54%	0.72%	0.63%
60%	0.69%	0.73%	0.93%	0.83%
70%	0.97%	1.06%	1.23%	1.15%
80%	1.44%	1.61%	2.12%	1.74%
90%	2.48%	3.37%	5.31%	3.74%

As implied in Table 6, default rates increase for any given acceptance target as furnishers cease providing positive information. From another perspective, default rates decline as data furnishers provide more positive information. To get a sense of the default rates, compare the results for the Base instance and Scenario 2. As data is restricted, the inability of lenders to accurately access risk degrades. In this instance, and assuming a 90 percent acceptance rate, the default rate increases from 2.48 percent to 3.37 percent, an increase of nearly 1 percentage point. In other words, going from Scenario 2 to the less restrictive Base case lowers the proportion defaulting by over 25 percent.

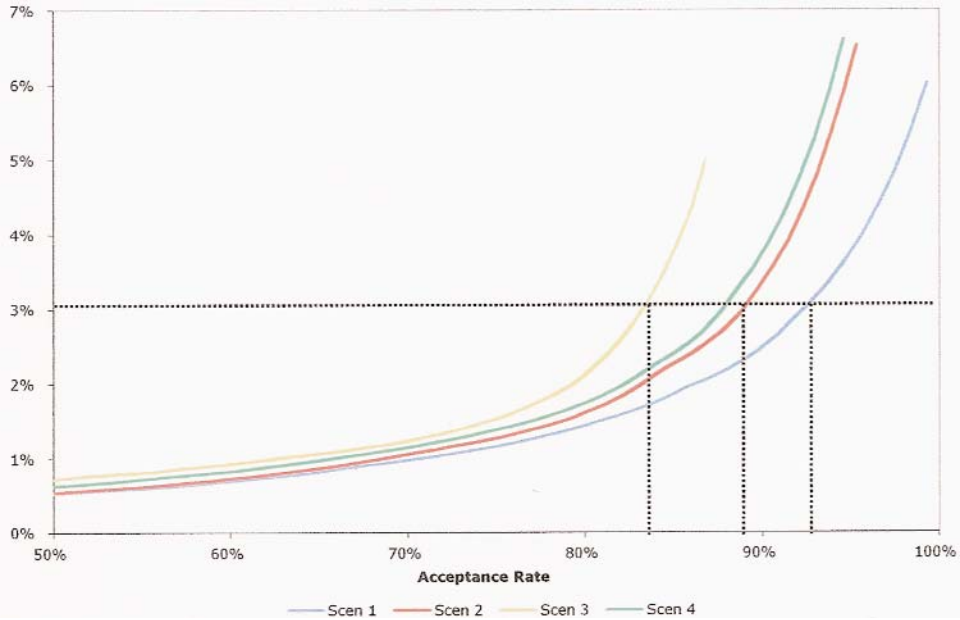
The shifts in delinquency rate may seem modest, especially given the relative low delinquency rates in Japan. In monetary terms these shifts are significant. If we assume both a 70 percent acceptance target and an average household liability (excluding mortgages and land) of 510,000 yen, we see that considerable amounts become delinquent over the base rate.[83] Scenario 2 extended to the parameters found in Japan would witness an *additional* 48.8 billion yen becoming delinquent. Likewise, scenario three sees an addition 141 billion yen becoming delinquent, and Scenario 4 an additional 97.6 billion yen. Needless to say, were we to also include mortgage and obligations on land, these figures would increase significantly.

Shifts in the Trade-Off

Tables 5 and 6 depict a shift in the trade-off between acceptance rates and default rates. Figure 3 depicts these trade-offs as curves.

83 Source: Statistical Bureau, Director-General for Policy and Planning and Statistical Research and Training Institute, Ministry of Internal Affairs and Communications.
http://www.stat.go.jp/english/data/sav/2006qn/index.htm

Figure 3: Acceptance Rate-Default Rate Trade-Offs by Scenario



As furnishers provide less and less positive information, the "higher" the curve, each acceptance target corresponds to a higher default rate. Furthermore, each default level, in turn, corresponds to a lower acceptance rate. The chart makes the performance losses explicit. While there are small differences in the performance levels of the base scenario (Scenario 1) and Scenario 2, the restricted bank reporting system, at lower levels of acceptance, the difference becomes much more pronounced as the acceptance target grows. Symmetrically, if an economy aimed for a delinquency rate of 4 percent, a full-file, comprehensive system would allow the extension of loans to nearly an additional 3 percent of the population, as compared to Scenario 2, and nearly an addition 9 percent of the population over Scenario 3. For our sample of 1.06 million, these differences translate into the loss of access to credit for 40,000 to 90,000 people.

Error Rates

The loss of the ability to assess risk accurately, which leads to rising default rates and/or worsening acceptance rates, as shown above, stems from the fact that with less information mistakes are more common. The worsening K-S implies as much. Table 7 shows the changes in Type I and Type II error rates for the four scenarios.

Table 7: Changes in Error Rates

Scenario Base	Scenario 1	Scenario 2	Scenario 3	Scenario 4[84]
Type I (false positives, or mistaking a high risk borrower for a low risk one)	.08%	.08%	.11%	.09%
Type II (false negatives, or mistaking a low risk borrower for a high risk one)	17.87%	18.17%	18.50%	17.86%

Here, we see that mistakes, or misjudgments of an individual's risk profile, become more common as information is lost.[85] Those who are risky consumers are more likely to get credit, while those who are good risks (not over-indebted and/or have a history of paying responsibly) are less and less likely to be extended credit. Given that Canadian loans perform quite well, the error rates are low relative to, for example, the United States. Thus we see high-risk borrowers are rarely mistaken for low risk ones, leading to impressively low delinquency rates. (The model we used also performs remarkably well.) As in most instances, Type II errors, the misidentification of a low-risk consumer as a high-risk one, is more prevalent. For the simulations we conducted, the shifts are modest in the worst of cases, but they nonetheless comprise of nearly 7,000 people in our sample.

It should be noted that the Canadian simulation may underestimate the losses for Japan. Canadian data is robust, and information is highly accurate and kept on file. These facts reduce mistakes considerably. The rate of Type II errors in Japan may be considerably greater, a fact which would not show up in delinquency rates. For Scenario 2, again based on the size of Japan's credit eligible population, an *additional* 320,000 people who are good credit risks would be mistaken for bad ones. When we move to Scenario 3, that figure rises to an *additional* 670,000 people. The loss of information results in lower acceptance rates for any given target default rate. However, this result is only part of the picture. Given that false positives increase, the number of those who deserve credit but are denied is even greater than that indicated by simple acceptance rates.

84 It should be noted that the sample of files was constrained by a minimum of five trade lines. The rationale was that far too many files would disappear when information was redacted, as well as the need to have enough instances of types of trade lines (such as retail credit). This "thickened" the overall set of file. One possible consequence is that the severing of participation rates has a smaller impact that would for a representative sample, as they remain thick enough to score well. Thus Scenario. 4's error rates are quite similar to the base Scenario's error rates.

85 Given the proprietary nature of the commercial models performance statistics, we are not able to provide the actual rates, only changes.

CONCLUSION

Relative to North America, the European Union, and a growing number of APEC member economies, the consumer credit sector in Japan remains largely under-developed. While a tradition of relationship banking explains some of this relative under development, we believe much can be explained by the fragmented, inaccurate, and incomplete Japanese consumer credit reporting system.

Because of the deficiencies in the Japanese consumer credit reporting system, many credit-worthy borrowers and entrepreneurs are unfairly denied access to affordable mainstream credit. A large number of these would-be borrowers are forced to resort to the black market. The debt burden resulting from a combination of usurious rates of interest and stressful or even threatening collection techniques affects the lives of millions of Japanese. Some borrowers even disappear, using "midnight movers", rather than facing the shame of bankruptcy or risking the well-being of loved ones.

The results from the analysis in this study offer promising solutions. In short, should the Japanese adopt a uniform comprehensive or "full-file" consumer credit reporting system, retail lending in Japan will likely flourish.

Results from our multi-country, ordinary least squares multi-variate regression analysis suggest the following:

- **Private, full-file credit bureau systems with high participation rates lead to dramatic growth in private sector lending:** Reforming the consumer credit reporting system in Japan will increase productive and profitable lending in Japan. Movement from a system where no private full-file credit bureau exists with extensive coverage to one in which private credit bureaus with full-file data and a 100 percent participation rate exists results in growth in private sector lending of approximately 47 percent. While some information is shared in the Japanese system, given the major deficiencies with the current system, double-digit growth in lending to the private sector is not unreasonable.

The link between growth in private sector lending and growth in gross domestic product (GDP) is well established. By one estimate, growth in private sector lending of 30 percent would lead to an increase in GDP growth by 1 percent per annum, and increases in productivity and capital stock growth by 0.75 percent per annum.[86]

Results from our micro-simulations, based upon Canadian credit file data and a major commercial grade generic credit scoring model lead to the following conclusions:

86 Ross Levine, "Financial Development and Economic Growth: Views and Agenda." p. 706.

- **Adopting a full-file consumer credit reporting system would cause consumer lending in Japan to flourish:** For a target default rate of 2 percent, it is conservatively estimated that as many as 7.45 million Japanese borrowers who are currently shut out of the mainstream national credit system (and who for example, must rely on unscrupulous lenders in the black market), but who are otherwise creditworthy and would make timely payments, are denied access to credit because lenders cannot accurately assess their credit risk, credit worthiness, and credit capacity using available credit bureau information.

- **Adopting a full-file consumer credit reporting system would increase lending to small businesses in Japan and bolster entrepreneurship:** It is well-established that lenders are better able to make underwriting decisions on small business loans when they are able to access not only business profile data (a commercial credit report), but also the credit profile of the business owner (a consumer credit report). Absent a robust, full-file consumer credit reporting system in Japan, Japanese lenders are struggling with small business loan originations and setting margins for loans that are granted. This is an extremely inefficient system, one that dampens entrepreneurialism in Japan and acts to stymie domestic-led economic growth and organic innovation.

- **Credit reporting reform increases loan portfolio performance:** At a 70 percent acceptance rate, a Japanese lender using full-file credit reports would have a default rate that is conservatively estimated to be between 9 percent to 26 percent lower than a lender using any of the incomplete or negative-only credit reports currently used in Japan. We estimated that with full file, comprehensive reporting the size of delinquent loans (excluding loans for mortgages and land) would be between 48.8 billion and 141 yen smaller. A better performing loan portfolio increases a Japanese lender's profit margins, and increases the amount of capital it could lend given provisioning and capital adequacy requirements in Basel II.

- **Credit reporting reform enables fairer lending:** The results of the simulations in this report found that Japanese lenders could conservatively reduce Type 1 errors by 27 percent and Type 2 errors by 4 percent using more comprehensive full-file credit data rather than the incomplete and fragmented reports that are currently available from Japanese credit bureaus. Under the current system, we estimate that between 320,000 and 670,000 consumers, who are good risks, do not receive loans.

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