

Optimal Consumer Credit Bureau Market Structure in Singapore: Theory and Evidence

Michael Turner, Ph.D., Robin Varghese, Ph.D., Patrick Walker, M.A., Katrina Dusek, M.A.



May 2009

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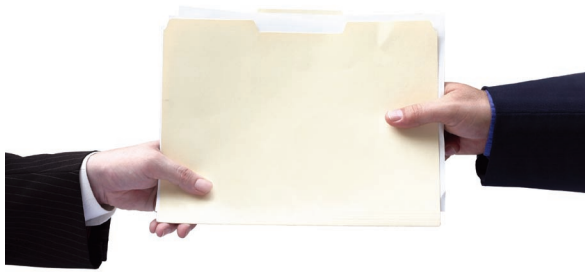
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► Abstract

It is uncontroversial that regulatory frameworks have extensive consequences for market structure. How they do so is less clear and varies sector by sector. Inasmuch as the consumer credit information sharing sector's evolution is characterized by a high degree of path dependency, how the sector is initially organized—in terms of which bureaus collect what information--shapes the industry's future development and thereby the future of Singaporean financial services.

The impetus for this report is the Monetary Authority of Singapore's (MAS) recent mandate that consumer credit information be reported to one private credit bureau and not others. This paper examines the relationship between the market structure and regulatory framework of a nation's credit information sharing system, and the performance of its financial sector. The objective of this paper is to identify the most likely consequences of the MAS mandate on consumer credit reporting upon Singaporean borrowers, lenders, and the national economy.

The impacts of the robustness of the information collected by credit bureaus are addressed to demonstrate the social and economic value of sharing credit information. The theoretical and empirical literatures are summarized in Section 2. More relevantly for the case of Singapore, this paper examines whether the decision to mandate the reporting of consumer credit information from large data furnishers to just one private credit bureau and not all authorized consumer credit bureaus, private or public, will subsequently impact the evolution of the credit information system. This paper find that this decision will shape the terrain of competition in ways that are detrimental to the growth and evolution of Singapore's financial services sector and its overall economic performance. This paper further argues that rules promoting competition among credit bureaus, even under conditions of oligopoly, are socially and economically optimal.



1. Introduction – Information Sharing in Theory and Practice

The practice of information sharing in consumer credit markets has tangible economic impacts. The expansion of information sharing across a population through increased data furnisher participation has been empirically linked to greater access to credit, fairer access to credit, and improved lending performance¹.

Increased information sharing, where private credit bureaus with full-file and comprehensive credit information exchange credit data:

- ▶ allows for more informed risk-assessment,
- ▶ improves access to credit for groups that have been traditionally underserved,
- ▶ enables greater and broader access to capital for small businesses and entrepreneurs,
- ▶ generally enables better lending decisions with lower rates of delinquency and default, and
- ▶ increases private sector lending more than any other reporting regimes².

The ability to better assess credit risk across a population can lead to a sustainable expansion of lending. The secondary effects of increased information sharing are greater economic growth and stability, lower average interest rates, lower poverty and greater distribution of income³. It has been shown that countries with larger financial sectors sponsor higher rates of growth, increases in productivity, and increased rates of growth in capital stock⁴.

Another consequence of increased information sharing is decreased average interest rates. Interest rates are lowered when lenders are provided more robust and comprehensive data sets to utilize in determining consumer risk. Without the benefits of full-file and comprehensive information sharing, lending portfolios contain more high-risk loans and lenders are forced to institute higher interest rates across a portfolio to help mitigate losses. Additionally, higher interest rates promote higher risk, because low-risk projects cannot yield the return to compensate for the cost of obtaining the loan⁵. Increased information-sharing allows lenders to make fewer poor lending decisions and for losses to occur less frequently, and thus lowering average interest rates⁶. A recent study that examined the relationship between greater private sector lending and poverty found that increased private sector lending increases the growth of the poorest quintile's income share, and decreases income inequality. Additionally, financial development that is accompanied by the sharing of information correlates to a decreased share of the population that survives on less than \$1 per day⁷.

In today's global economic environment that couples a sharp real economic downturn with constrained capital markets, Singapore appears to be no exception with its 4th quarter 2008 GDP declining by 16.4% on a seasonally-adjusted annualized quarter on quarter basis⁸. Policies that foster greater, sounder and more equitable growth through improvements in lending should obviously be high priority.

1.1 The Small Business and Consumer Credit Nexus

A key, but often overlooked, aspect of consumer credit bureaus is their impact on entrepreneur and small business access to credit. Entrepreneurs and small business owners and operators frequently find it difficult if not impossible to raise needed credit through the means used by larger businesses. They typically cannot offer stock, sell bonds, or have had long and involved relationships with banks. Startups may have no banking relationship at all and small businesses do not produce the sorts of financial statements banks use when lending to medium and large businesses. Consequently, the personal credit history of the entrepreneurs or business owners and operators looms very large for lenders. This may be used alone or combined with other information on the business. Fair Isaac in the United States, for instance, has created a small business and startup credit score based on business and

business owner credit information from consumer credit bureaus and the loan application⁹. Small business owners and entrepreneurs also may use personal credit directly, such as personal lines of credit at a bank, credit cards, and second mortgages to either start business, smooth cash flow fluctuations, or finance investments. Therefore, the impact of consumer credit bureaus should be viewed as more than simply improving credit to consumers for common sorts of consumer expenditures.

Berger and Udell (2005)¹⁰ provide a good overview of the literature exploring the development and impact of small business credit scoring and Berger and Udell (2006)¹¹ have created an updated framework for SME finance, accounting for technological changes and financial innovations that have enabled small business credit scoring.

When implemented in a comprehensive and full-file scenario, the sharing of consumer credit information has clear benefits for an economy through increased growth in the financial sector and improved access to credit for consumers, small businesses, and entrepreneurs. This can translate to increased economic stability, lower rates of delinquency and default, a more dynamic economy, and greater economic growth.



2. Impacts of the Types and Quantity of Information Exchanged

The details of information sharing are crucial to its benefits to consumers, lenders, and society as a whole. It is not simply a question of whether or not to share information. Some information cannot be efficiently exchanged, something that is constantly changing with technology. Some information is not useful, or useful enough to exchange. Still other information should not be exchanged, owing to societal views on privacy, for instance.



As a practical matter, exchanging *all* information that can be efficiently exchanged, and that may be potentially useful, and permissible for a society, would likely be overwhelming to all involved and not in the interests of the data furnishers, the data aggregators, and the end users. Information sharing began with exchanging the most important type of data and has been expanding and evolving over the years, resulting in greater coverage of consumers, greater types of data, and more sectors of the economy included.

Below are outlines of some of the basic dimensions along which information exchanged may differ.

2.1 Coverage

As information sharing is expanded across a population, private credit bureaus are better equipped to provide lenders with the information needed to ascertain borrower risk. As coverage of the adult population increases, either through increased participation or expansion of sectors reporting, evidence suggests that private sector lending also rises. Turner and Varghese (2007) show statistically significant increases in private sector lending (as a share of GDP), associated with increased rates of coverage by private bureaus. A change from no coverage to 100 percent full-file coverage is associated with private sector lending rising between 48 percent and 60 percent of GDP, depending on the exclusion of outlier observations.

Djankov, McLiesh, and Shleifer (2007) also found statistically and practically significant increases in private sector lending associated with increased coverage at private bureaus¹³. There is strong evidence that as coverage expands, credit access rises faster for the segments of society that have been traditionally excluded from the mainstream financial sector. Turner, et. al (2006) found low-income households, the young, and ethnic minorities disproportionately benefited when consumer credit file coverage is expanded in the United States with the reporting of utility and telecom payment data¹⁴. And Turner and Varghese (2007) found that with greater coverage resulting from increased full-file participation by data furnishers in Columbia, women and the young, traditionally underserved groups in Columbia, disproportionately benefited.

2.2 Negative-only vs. Full-file reporting

Negative-only reporting refers to a credit reporting system in which data furnishers selectively report only adverse account information to credit bureaus. This provides bureaus with a partial snapshot of account behavior, but fails to accurately depict the entire credit history. Negative information includes account delinquencies (usually 30 to 90 days in arrears), defaults (usually 90+ days in arrears), collections, bankruptcies and other public derogatory information. These data systems are known as “event based”, because information sharing is only initiated in the case of an adverse account event.

For a large percentage of borrowers, such events are rare¹⁵. A data furnisher that provides negative-only information fails to include information about accounts that have never entered these conditions. Therefore, a credit file that is derived from negative-only information excludes all positive repayment behavior, as well as evidence of the existence of accounts that are current. In a negative-only system, consumers who have no credit history are equivalent to consumers who have established credit accounts and have met their obligations to repay without an occurrence of delinquency, default, collection, or bankruptcy. This partial survey of a person’s credit history provides a less robust prediction of credit risk and is a very poor indicator of credit capacity.

A negative-only system is also an unforgiving system. The most common drivers of personal financial challenges –unexpected job loss, divorce, medical expenses —usually result in late payments or defaults. A negative-only system would capture this information. Subsequently, as a person is trying to get back on their feet –after paying debt obligations or getting a new job –it will be harder to do so as their recovery (new income, reduced debt) isn't recorded in a negative-only system. Such a system makes for a “sticky floor”, making self-advancement more difficult for those who have suffered adverse life experiences. By contrast, a full-file system captures positive payments, and would identify a person's improved economic circumstances in near real-time. Under a full-file system, a person recovering from an adverse life experience would have their recovery aided by an improved credit score, making possible access to affordable sources of mainstream credit.

Full-file credit information includes all aspects of negative reporting in addition to many of following account elements: account balances, number of inquiries, debt ratios, on-time payments, credit limits, account type, loan type, lending institution, interest rates and public record data¹⁶. The major benefit of this increased level of information sharing is the ability to more accurately assess credit risk and capacity. This translates to fewer poor lending decisions and fewer instances of borrower default. Additionally, it results in greater private sector lending,

fairer lending across a population, and increased access to credit¹⁷. Extending information sharing to full-file reporting is a cost-efficient way to better assess risk and avoid financial loss through bad loans. Furthermore, more comprehensive information provides data on those more vulnerable to discrimination, including women, racial minorities, low income borrowers, and younger segments of the population¹⁸.

2.3 Comprehensive across financial sectors

Information-sharing coverage can be comprehensive across financial sectors such as banking, retail, credit cards, insurance, or can be limited to certain sectors as defined by data sharing regulations or by market outcomes. Segmented or non-comprehensive reporting may be full-file or negative only. Comprehensive reporting provides similar advantages as full-file reporting. Specifically, as information sharing is increased, there is an increased ability to better assess credit risk, creditworthiness, and credit capacity. Comprehensive reporting across financial sectors has been empirically shown to increase access to credit, provide fairer access to credit, and decrease risk through fewer lender mistakes and fewer borrower defaults¹⁹. The more inclusive and comprehensive the information a lender has on a borrower's complete financial and payment history, the better lending decisions can be made.

2.4 Non-financial data

Non-financial data is payment or account data from accounts for goods or services outside of the financial sector, such as utility and telecom services. These services are usually more widely used than financial services. PERC studies have shown that the segments of the U.S. population that are least likely to be in the mainstream credit market, such as ethnic minorities, lower-income households, the young and the elderly benefitted most positively from the addition of non-financial information to their credit files²⁰. These studies have shown that the inclusion of non-financial data provides increased fairness in credit extension and allows lenders to make better lending decisions. Specifically when added to consumer credit files, the non-financial data brings in many who would have had no credit file at all, adds needed additional payment records to those consumers with only one or two records on file, and have little impact on those consumers with many traditional payment records on file. Lending expands as new consumers are brought into the system and lending improves as credit-scoring models using the additional data better predict payment outcomes. In short, there are improvements in both equity and efficiency.

As discussed in the first section, the benefits of improved coverage and greater and more comprehensive information impact not only credit used for consumer durables and non-durables, but also credit used by small businesses and entrepreneurs.

The importance of private bureaus, with full-file and comprehensive data is widely understood, the Asian Bankers Association's own position paper on the topic states, "the ABA recommends that governments consider measures to promote full-file and comprehensive reporting to private credit bureaus"²¹.

3. Information Sharing Market Structure

As summed up in the previous sections, the benefits from information sharing for lenders, consumers, small businesses, and society as a whole very much depend on the types, quantity, and quality of information exchanged. More information is usually better in providing a fuller picture of a borrower's credit worthiness, capacity and risk. Lending decisions using full-file credit data outperform decisions using negative-only data. And, as expected, lending decisions using more comprehensive data also outperform decisions using less comprehensive data. Greater coverage of a population by credit bureaus is linked to increased credit access and private sector lending. Despite the many observed benefits of exchanging full-file and comprehensive information, what information is exchanged and is available for lending decisions seems to largely depend on the market structure of the credit information sharing industry.

3.1 Private Bureaus v. Public Registries

Credit bureau ownership is either public or private. Privately owned bureaus operate under a for-profit business model and exist in two main formats. In some cases, banks or other creditors own shares of a bureau (a non-neutral bureau), while in others, financial institutions or creditors own no shares of a bureau (a neutral, or third party bureau). Public bureaus operate on a not-for-profit basis and usually rely on membership fees to cover the costs of operation and are administered by the government. Differences in ownership appear to have different consequences.

3.1.1 Ownership Effects: Public versus Private

Private and public credit bureaus operate under different protocol, which ultimately plays into the performance of the financial sector of a given country²³. Public credit bureaus (usually referred to as public credit registries) are largely supervisory in role, are more likely to concentrate on obtaining data on pledged collateral. Public bureaus mostly focus on data from supervised institutions, such as banks and savings and loan cooperatives. This role allows public credit bureaus to monitor the financial sector, and insure safety and soundness by, for example, determining if reserve levels are adequate.

Private bureaus, on the other hand, are more likely to collect data on account holders, as well as more detailed account information²⁴. Private credit bureau business models are often seen as the most efficient way of operating a credit bureau as these companies seek business expansion through the provision of new services²⁵.

Additionally, privately-owned bureaus are usually the reporting bureau of choice for smaller financial institutions. The World Bank survey of public credit registries and private credit bureaus found that non-commercial and non-development financial institutions were more likely to provide information to privately owned bureaus. Examples of these institutions include credit unions, credit card issuers, firms providing government loans, and retail card issuers²⁶. Private bureaus are usually considerably more thoroughly staffed and operate with a greater amount of resources. In an effort to grow in size and function, private bureaus often have greater technological resources as well, and are thus better equipped to protect consumers from identity theft and fraud.

Public credit registries provide less efficient business models because their business goals differ drastically from privately owned enterprises. Public credit registries' primary concern is supervision, while private bureaus exist to ease lending and provide credit checks for lenders, with the ultimate goal of achieving more accurate risk assessment. That is, they serve to make lending more efficient and profitable. Simultaneous operation of public and private bureaus may increase overall lending, as such cooperation leads to new innovation and lower prices for services offered.

Recent studies have shown differences in lending impact when a private credit bureau versus a public credit registry business model is used. In a study of 129 countries, Djankov, McLeish and Shleifer (2005) found that private bureaus increased lending by 21 percent, whereas public credit registries only increased by 7 percent. When only examples of poorer economies were used, the same trend surfaced, with private bureaus leading to an increase of 14.5 percent and public credit registries only increasing lending by 10.3 percent²⁷. Additionally, a 2007 study by PERC found that 100 percent coverage of credit-eligible adults in a full-file credit system can increase private sector lending by upwards of 60 percent of the given country's GDP²⁸. Such growth was not found with public credit registries.

3.2 Variations of Private Ownership

A potentially important variable that may influence the types of data included in a private credit bureau's files is who owns and/or controls the credit bureau.

3.2.1 Non-Neutral Bureau

Globally, there are a number of private credit bureaus that are owned, partly or completely, by financial institutions or their trade associations from which the bureau collects data. While the major banks of an economy coming together to form an information exchange may be a logical

way for a private credit bureau to be started, it may not produce the ideal private credit bureau. Since banks, in this example, are major furnishers and users of credit bureau data, it would likely be the case that in wanting their own bureau to succeed, banks would have a preference to furnish to their own bureau, and maybe not at all to others. They may also primarily or exclusively use credit reports from this bureau. The result would be to inhibit the development of other bureaus or force other bureaus to move in to other remaining niches, such as non-bank data, in general, or more specific niches, such as a bureau for non-bank credit card companies. The lack of direct competition between the niche bureaus, each with a secure set of data furnishers and customers, may lead to complacency, a lack of innovation, and credit reports that do not fully reflect borrowers' complete financial pictures. The likely result would be a distorted and less than optimally efficient credit markets for consumers, entrepreneurs and small businesses. Economic growth would be dampened and there would most likely be safety and soundness consequences.

Moreover, entrenched banks that dominate may use the bureau to restrict competition in banking by limiting access to either information for lending or even, say, information for the creation of analytic tools. Recall that information sharing reduces the problem of adverse selection and lowers search costs. By using the bureau they dominate strategically, entrenched banks can create a barrier to entry and thereby limit competition. While there are exceptions to this dynamic, such as Schufa in Germany, bank dominated bureaus can be seen to inhibit

competition elsewhere. In Mexico, the competitive landscape has been one in which a single private bureau owned by banks has come to dominate, displacing the public registry and crowding out new entrants. It was able to do this in large part due to its relationship with the banks, its owners, and the major customers of credit bureaus²⁹. The Mexican government recognizing this, is currently working to promote competition and neutral bureaus.

3.2.2 Neutral Bureau

The counterpart to bureaus owned or controlled by major data furnishers within a sector are neutral bureaus that are independent of their data furnishers. These businesses depend on maximizing net value that can be generated from exchanging and adding value to as much financial and non-financial information, gathered from many sources, and distributed to as many users as is optimal. Its bottom line is ultimately more closely aligned with the interests of all potential data users than that of non-neutral bureaus, whose interest would likely be more focused on the narrower needs of the owners. Neutral bureaus are likely better positioned to be able to gather more information from the broadest set of data furnishers. This is likely the case since, for example, a bank may be reluctant to share its customer information with a bureau controlled by non-bank credit card companies, its potential competitors.

Why some types of ownership structures emerge is probably due to a complex combination of factors, such as firm concentration within financial sectors and niches, the competitive

landscape between financial sectors and niches, and accidents of history. For instance, if a few banks dominate the banking industry and the banking industry dominates the financial sector, it may be in the interest of the few large banks to form a bureau to share information among themselves to maintain their dominance. In this way, a bureau may become another tool used by larger firms to maintain their dominance. It may also be the case that dominant firms may be averse to sharing data at all, or if they do, they may share only some information, such as negative information. This may be rational for them since they may feel that their own internal database contains a large share of the potential market, and by sharing too much account information they may feel like they have little to gain and much to lose, primarily the large rents they are extracting from their customers.

3.3 Types of Competition

3.3.1 Monopoly

Though some have advanced the argument, there is little strong evidence that the information sharing industry can be characterized as a natural monopoly³⁰. Unlike much physical infrastructure, the information technology infrastructure that is the backbone of the modern information sharing industry is rapidly advancing with information transmission and storage costs declining at relatively fast rates. In fact, much of the costs of sharing payment and account information is borne by the data furnishers, in terms of updating or modifying their billing and IT systems, possibly expanding customer service de-

partments, and general internal re-organizing to accommodate data reporting. Once the data furnisher is in a position to report payment data to one bureau, most of the heavy lifting has already occurred and there is a negligible marginal cost in furnishing the data to another credit bureau.

From the side of the credit bureau, much of the costs associated with creating a bureau is likely in the development of both IT infrastructure and software to support both data storage rules and matching logic as well as institutional knowledge (how to interact with data furnishers and lenders, needed data standards, analysis of information, legal and privacy considerations, creating viable products, creating a viable business model, establishing trust, etc.) that can be partially transferred from market to market. Taking advantage of these already expended fixed costs in obtaining such institutional knowledge and trusted brands, there are several bureaus that are operating globally. They include, TransUnion, Equifax, Experian, Dun and Bradstreet, and CRIF, among others.

From the cost perspective, there appears little reason why policy makers should support a credit bureau monopoly.

Monopolistic firms in the information-sharing sector can exist for a few reasons, none of which include the possibility of a natural monopoly—a situation in which one firm can produce at a lower social cost than two or more firms. The notion of a natural monopoly stems largely from efficiencies of scales in provision, owing to very high fixed costs. Since the

information and communication revolution has dramatically reduced the costs of transmission and storage of data, it is hard to claim that information sharing is a natural monopoly, if indeed it ever was.

Information-sharing monopolies, where they exist, do so in large measure because of either regulation or cartelization by data providers such as banks. An example of a government-owned credit bureau monopoly is the People's Bank of China's Credit Registry. While some of the negative consequences of monopolies that have been mentioned above, such as the use of information to inhibit new entrants or monopoly pricing may not be as problematic with government-owned bureaus, there may be problems with a lack of innovation and responsiveness to lenders' needs. The absence of competitive pressure may inhibit incentives to find new data sources and new analytic products.

From a practical (and risk) perspective, since a data furnisher is sending out potentially sensitive account information on its customers, there will be concerns regarding privacy and access to proprietary information. So, data furnishers would be unlikely to voluntarily supply data to a new small start-up with no reputation and that is not backed by established, trusted parties. The risk associated with supplying data to many small firms would likely be unacceptable.

Regulators also may require some basic standards, a minimum level of quality control, a track record, proof of an ability to handle data securely, proof of an ability to adequately manage

consumer disputes, and so on, to operate as a consumer credit bureau. This may reduce the number of organizations able to operate a credit bureau to only a very few.

For these reasons, information-sharing markets, when competitive, are usually best characterized as oligopolies; that is, a market dominated by a few companies but where competition still remains. Next we will discuss two types of oligopolies, differentiated and homogeneous.

3.3.2 Oligopoly

When there are a few companies competing in a market, there are a number of ways in which the companies, the oligopolists, may compete. They can all produce identical products and compete with each other essentially on price. This is called a homogeneous oligopoly. Conversely, a differentiated oligopoly is characterized by a few companies (sellers) in a single market producing non-identical products. Here the companies compete on price *and* product differences.

Although actual ways in which competition occurs is difficult to perfectly classify in neat categories, the following broad categories are useful for this discussion.

Differentiated or Heterogeneous Oligopoly - Within Sector Fragmentation

A differentiated or heterogeneous oligopoly with fragmentation within sectors occurs when a significant share of data furnishers within the same sector, such as banking, report to separate bureaus.

An extreme example of this occurred in Russia in which a poorly written mandate required banks to report credit information to a bureau. The unintended consequence was that many banks simply created their own bureau and reported to it. Such fragmentation, even in less extreme examples, produces bureaus with incomplete pictures of the financial history of borrowers and reduces competition among financial institutions within a sector, such as banking. The incomplete picture of borrowers' financial history can lead to overextensions, overall reduced lending, and an increase in unsafe and unsound lending.

Differentiated or Heterogeneous Oligopoly – Across Sector Fragmentation

A differentiated oligopoly with fragmentation across sectors occurs when most or all of the data furnishers of a particular sector, or niche of a sector, report to one bureau and data furnishers of another sector, or niche, report to a separate bureau. Japan's information-sharing market is an example of this. In Japan, consumer finance companies report to one bureau, banks to another, and non-bank credit card companies to yet another³¹. The bureau banks report to, KSC, was founded by the Japanese Bankers Association in 1973. Such a fragmentation across sectors or niches means lenders would typically have an incomplete picture of borrowers. It also means, as was the case with monopolies, that since the bureaus would not be competing directly with one another, and with each having a fairly secure set of data furnishers and customers, complacency and a lack of innovation may result.

This may lead to higher prices, poorer data quality, and fewer value-added services available designed to meet lenders' needs. The result of higher prices is a reduced use of the credit bureaus information throughout the economy. However, the products bureaus produce are not simply indistinguishable widgets; the quality, type and coverage of the data as well as the value added services accompanying the data, such as credit scores, are what defines much of the total benefits that an information-sharing market can produce. As information technology and lending evolve, so do the needs and capabilities of information sharing. As such, the ideal information-sharing market should be comprised of dynamic firms that are responsive to market forces and changing technologies.

Consequences of Across Sector Fragmented Oligopolies on Lending Performance

If reporting becomes fragmented by sector, the net result may be a less efficient lending market resulting from a system in which a composite picture of a consumer is never fully gained. The following tables show the result of simulations performed on Canadian credit files simulating the more fragmented Japanese information-sharing system³². The simulations compare an integrated full-file system to fragmented ones along dimensions of acceptance rates for a lender's target default and default rate for a lender's target acceptance rate. That is, the simulations measure the extent to which there is a trade off between performance and acceptance. The extent of the trade-off in many ways measures the error of mistaking high-risk borrowers for low-risk ones and vice versa.

► **Scenario 1 or Base:** 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.

Table 1: Acceptance Rate by Scenario

Target default rate	Base	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%

Source: Turner, Michael, et. al. "On the Impact of Credit Payment Reporting on the Financial Sector and Overall Economic Performance in Japan" PERC 2007 <http://www.infopolicy.org/files/downloads/Japan.pdf>

Table 2: Default Rates by Scenario

Target acceptance rate	Base	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%

Source: Turner, Michael, et. al. "On the Impact of Credit Payment Reporting on the Financial Sector and Overall Economic Performance in Japan" PERC 2007 <http://www.infopolicy.org/files/downloads/Japan.pdf>

As we see, fragmented systems are accompanied by lower acceptance rates, high default rates, or both.

Any system that sets up fragmented reporting runs this risk, namely that lending will remain stunted and inefficient.



Consequences of Across Sector Fragmented Oligopolies on Innovation

Another consequence for the economy if reporting becomes fragmented by sector is the limitation of innovation. As we noted above, when firms produce very comparable goods, there is price competition. Additionally, each firm will try to differentiate its product by enhancing it (adding new sources of data, the provision of new analytic products) in the search for advantage in the face of competitive pressures. Each of these advantages is likely to be short lived.

If a firm can secure an advantage via an artificial barrier, it will be less like to face competitive pressure and innovate. As it secures rents from its monopolistic hold on, e.g, bank data, it will also feel less of a pressure to innovate and compete. The market for information and related analytic products will be stunted relative to what could obtain under circumstances of heightened competition.

A clear instance of this is the information-sharing market in Japan. Given the fragmented nature of information sharing in Japan by financial sector, it is no surprise that the world's second largest economy witnesses a weak consumer lending market. This weakness is supported by underdeveloped analytic and information-sharing sector. For example, scoring models have only recently been developed. Japan's retail credit market remains underdeveloped, resulting in high interest rates.

Homogeneous Oligopoly

Bureau competition described as one of a homogeneous oligopoly implies there are a few competitors producing roughly comparable products. In this sort of competition among bureaus, the bureaus are usually neutral with no competitor able to hide behind a secure set of data furnishers (suppliers) or customers. In this competitive environment, a bureau's attempts to acquire new types of data, such as from utility companies, are usually met with similar

movements by their competitor(s). Any large advantages from types of data gathered or data gathered by sector are usually transitory. Each competitor has the incentive to expand the data it collects, and, importantly, the quality of the data housed. Such competitors also compete with the creation of value added services. And again, any advantages should be transitory. With similar products sold, the bureaus also compete on price. This sort of competition roughly describes the information exchange markets in the United States, Canada, and the United Kingdom.

With comparable datasets, competition focuses on developing all manner of value added services, that crucially transforms the raw data into valuable products, such as credit scoring for risk assessment, fraud detection, and improved data delivery and analysis methods.



Data Quality

The quality or the accuracy of the data of a credit bureau is crucial to its usefulness. A bureau can influence the quality of the data it houses by, among other things:

- ▶ not accepting data it suspects can be of low quality;
- ▶ requiring and verifying that its data furnishers meet certain basic quality control and reporting criteria;
- ▶ having strict internal bureau quality control standards and audits; and
- ▶ allowing consumers the ability to participate in verifying the accuracy of data in a file.

A potential benefit to a homogeneous oligopoly of credit bureaus is the impact on data quality. Unlike easily understood aspects of a credit bureau's database, such as its coverage of the population, whether its data is full and comprehensive, and the amount of data it contains, the quality of its data is not obvious. One way in which the quality of the data does become clear is if lenders are able to observe how well one comparable database is able to predict payment

behavior relative to other databases. This is obvious to lenders (data users) and the bureaus. If the databases were not comparable in the types of data they contained, or if there was only one database, data quality would be obscured. A homogeneous oligopoly of credit bureaus provides a strong incentive to maintain the quality and usefulness of the bureaus' databases by enabling more direct comparisons of databases. Attempting to ensure the quality and usefulness of databases by other means, such as through regulation, would seem to be very difficult.



3.4 Initial Market Structures and Path Dependency

The case of the segmented information-sharing market in Japan or the numerous markets with primarily negative only information exchanged are telling. That these systems persist suggests that even when presented with the strong evidence that has been accumulated over the years of the benefits of comprehensive full-file credit information, it is very difficult to change major

facets of the markets once they have been established. Bureaus can become complacent in their own special niche (if one exists), special interests arise around the contours of the market and solidify them, and lenders and data furnishers can become accustomed to what sorts of information are used and supplied. The initial structures that should be of the most concern are the cases:

- ▶ when a handful of dominant data furnishers (such as banks) controls a single bureau that, in turn, dominates the information-sharing market; or,
- ▶ when separate bureaus arise specializing in the collection of different datasets (one for bank data, one for non-financial data, one for credit card companies, etc.).

Such market configurations seem to short-circuit the benefits that can arise from direct competitions, such as actively searching for more firms to furnish data, improving data quality, and creating value added products.

Even in optimal circumstances in which there is direct competition between private neutral homogeneous bureaus, changes such as the addition of non-financial data to consumer credit bureaus in the United States, or bureaus attempting to acquire greater account information, such as credit limits, can prove to be slow going. But there is usually progress, with the bureaus acting to help push the change. Such an active role is usually necessary when interacting with data furnishers that may be very reluctant to supply data.

This is also evident when privacy and consumer advocates resist any changes and exchanges of information, as well as when the information users are unsure of the value of new data if it has not already been used.

The bureaus, the center of the information-sharing market, are key to its development. If bureaus lack innovation or become complacent, the information-sharing market, as a whole probably will as well.

Such market configurations seem to short-circuit the benefits that can rise from direct competition, such as actively searching for more firms to furnish data, improving data quality, and creating value added products.



4. Information Sharing in Singapore

There are two private consumer credit bureaus in Singapore, the DP Credit Bureau (DPCB) and Credit Bureaus Singapore (CBS). Both are authorized credit bureaus by the Monetary Authority of Singapore (MAS). CBS is a joint venture between the Association of Banks in Singapore (ABS) and DBIC Holdings and has been operating as an authorized consumer credit bureau since 2002³³. Unlike CBS, DPCB is a neutral bureau (not operated completely or partially by data furnisher and users) and began operations authorized as a consumer credit bureau in 2007. DPCB went live, actually exchanging information, in 2008, the same year Experian took a 40% stake in DP Information Group, the parent company of DPCB³⁴.

Recognizing the importance of private credit bureaus, as discussed briefly above, CBS was permitted and authorized to operate as a credit bureau. Additionally, also no doubt recognizing the importance and value from competition, DPCB was later authorized by MAS as a credit bureau.

Appreciating the benefits discussed above from having comprehensive credit files and the pitfalls from having a fragmented information-sharing market, the MAS instructed initial members of CBS, that had been furnishing data to CBS when DPCB was first authorized to operate as a credit bureau, that they *must* continue furnishing data to CBS and could choose to furnish data to DPCB.

The desire of the MAS in mandating continued reporting to CBS is clear and understandable, given some of the results discussed above, but the decision to mandate reporting to just one bureau may have longer-term unintended impacts on the shape of credit bureau competition and the development of the information-sharing market in Singapore.

CBS appears to have a dominant position in the collection and exchange of banking data. Given that CBS is also partially controlled by the Association of Banks in Singapore (ABS) and that it is guaranteed to be furnished data by the dominant lenders should raise concerns that the consumer credit information-sharing market will become distorted.

A plausible outcome could be that CBS, not driven by a market imperative to demonstrate value by continually innovating new solutions, and not needing to earn the trust and confidence of data furnishers as rapidly as DPCB in acquiring new data furnishers, may not develop the requisite knowledge to expand as rapidly as DPCB in acquiring new data furnishers, possibly from sectors not currently reporting.

This could lead to a fragmentation of information sharing across sectors. ... Once a significant dominance emerges, it may be difficult to challenge.

It may also be the case that DPCB, recognizing that it might be very difficult for it to gain all of the large banks that are CBS members as data furnishers and customers, may decide that it should strategically focus instead on other non-bank financial institutions, retailers, or non-financial service providers. DPCB may come to realize that it can never be a leader in the traditional bank data niche, and may instead focus on a non-bank and/or non-financial niche. This could lead to a fragmentation of information sharing across sectors.

Evidence strongly suggests that fragmented credit bureaus underperform those with comprehensive reporting practices.³⁵ It may not be obvious initially, but a specialization may develop over time as more types of data from more sectors are demanded and reported. It is also possible that CBS will parlay its initial advantage granted by the MAS and become the dominant consumer credit bureau in Singapore. Once a significant dominance emerges, it may be difficult to challenge. There may be little value in acquiring a

credit file that may have, on average, a fraction of the accounts contained in a credit file from a competing bureau. And the fact that the Association of Banks in Singapore partly controls CBS clearly raises the question of whether DPCB will be able to equally and fairly compete for customers (large banks) with CBS.

We believe the optimal credit information sharing market for Singapore would be a homogeneous oligopoly, with two or more bureaus competing on a level playing field, each with similar data, and forced to compete with one another on price, data quality, value added services, data furnisher expansion, and innovations in general. Achieving this would seem difficult unless the MAS changes current policy. While PERC believes that a voluntary credit reporting system permits the most innovation in value added services over time, and is therefore the socially and economically optimal approach, it understands the need in some cases to galvanize the market by mandating information sharing. While it is hoped that the mandatory regime is a temporary measure, and that credit information sharing in Singapore will eventually transition to a purely voluntary system once data furnishers understand the value of credit reporting, if a regime is in place that mandates reporting it should do so in a way that is competitively neutral. This is, the objective must be to regulate in a way that does not distort the market. This is the only socially and economically optimal outcome. Therefore, the MAS should reform its current policy of requiring some data furnishers to only

report to CBS to a policy that simply requires those data furnishers to report to all authorized credit bureaus. Such a change would go a long way in promoting a more optimal competition on a level playing field.



Shortcomings due to less than ideal competition should tend to grow over time, and may result from small differences that are not seen as of great concern today. It is the dynamic nature of the information-sharing market that makes competition so needed.

The core of modern information-sharing markets is fast evolving information technology. This is true for credit bureaus, data furnishers, and users of the information. The landscape of the financial services sector is also not stationary, with the growing use of electronic payments, mobile banking, and other payment and credit innovations. These changes impacting the exchange, storage, and needs of credit information suggest that information-sharing markets optimally need to be responsive to changing markets and technology.

Singapore, like all nations, has consumers and entrepreneurs that are currently underserved by the mainstream finance. In the United States and other advanced countries, many are hoping that innovations in information sharing will enable an improved and increased distribution of capital to underserved customers, small businesses, and entrepreneurs. It may be that such innovations become important drivers of asset and small business formation, which, in turn, has broader social and economic implications. For these reasons, prompting a non-distorted, competitive and dynamic information-sharing market has great long-term value.

In addition, the recent modification of the credit limit for borrowers, allowing Singaporeans earning over \$20,000 a year to borrow up to twice annual income (previously they were excluded) and those earning over \$30,000 up to four times annual income will likely create a need to expand the coverage of Singapore's consumer credit bureaus³⁶. With many, potentially, entering the system without a previous credit history, such as those earning under \$30,000 a year, it will be necessary for the credit bureaus to be particularly nimble, possibly taking advantage of non-financial payment data, such as from telecoms, utilities, retailers, and others.



And finally, as noted earlier, the Asian Bankers Association's own position paper on the topic credit bureaus recommends that "governments consider measures to promote full-file and comprehensive reporting to private credit bureaus"³⁷.



5. Policy Recommendations and Conclusion

A successful system of data reporting and consumer credit information sharing greatly contributes to the health of a financial system and a nation's macro-economy. Information sharing directly affects the ability of creditors to lend and turn profit, and allows consumers to participate responsibly in the economy. Importantly, consumer credit information sharing is also crucial to credit access for small businesses and entrepreneurs. In the modern global economy, it is paramount to financial institutions, SMEs, and consumers that information sharing provides the most accurate picture of credit risk, credit capacity, and creditworthiness. For this reason, PERC offers the following policy recommendations:

► **National policy must be competitively neutral:**

Information-sharing policy must not distort competition among bureaus by favoring one bureau over another.

► **If mandatory, then full-file and comprehensive:**

To the extent that reporting is mandatory, reporting should be full-file and comprehensive. This provides for the most accurate assessment of creditworthiness and translates to better loan decisioning.

► **Facilitate optimal market structure:**

It is best to have multiple private bureaus, each containing similar data, so that they compete directly on price, data quality, expansion of data furnishers, and value added services. The bureaus that exist should be fully certified to international standards.

► **Supply renewable licenses only to qualified bureaus:**

Certifications should be issued to bureaus that meet the highest standards of information sharing, including but not limited to:

- ▷ Data quality
- ▷ Data security
- ▷ Data integrity
- ▷ Transparency
- ▷ Consumer dispute resolution

► **Prevent fragmentation:** If banks are mandated to report to one bureau, then they should be mandated to report to all certified credit bureaus.

► **Banks or other credit data furnishers and consumers should not own credit bureaus:**

This hinders the development of information sharing and can lead to situations of sector fragmentation, such as in Japan, fragmentation within a sector, the case of Russia, or the market being dominated by one private bureau, the case of Mexico. Even minority ownership presents a temptation for anti-competitive behavior, and could result in less than optimal decisions being made by the bureau and its minority owners/customers/data furnishers. Neutral bureaus are better positioned to be able to meet the needs of all the data users and gather more information and from the broadest set of data furnishers.

ENDNOTES

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¹⁷Turner, Michael et al. *The Structure of Information Sharing and Credit Access: Lessons for Policy* A PERC Briefing Paper sponsored by the Asia-Pacific Credit Coalition, July 2008.

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